Welcome

Congratulations on your purchase of this Sony VAIO® computer, and welcome to the online VAIO® Computer User Guide. This user guide provides detailed information on all aspects of using your new VAIO computer, from keyboard functions to preinstalled software programs.
In the left navigation window, click the topics you want to learn more about, and that information will be displayed in this main window.

View the Electronic Flyer, which provides updates and supplemental information about your computer.

Go to the Sony Computing Support Web site to view the VAIO® Computer Specifications, which list your computer's hardware specifications and preinstalled software information.

For Sony software information, click **Start** and select **Welcome to VAIO life**.

Ergonomics and Caring for Your Computer

This section provides information on how to safely use your Sony computer.

Applying Ergonomics

Your computer is a portable device and can be used in a variety of environments. Whenever possible, you should apply the following ergonomic considerations:

- **Position of your computer —** Place the computer directly in front of you as you work. Keep your forearms horizontal, with your wrists in a neutral, comfortable position while using the keyboard, touch pad, or external mouse. Let your upper arms hang naturally at your sides. Take breaks during sessions with your computer. Excessive use of the computer may strain muscles or tendons.

- **Furniture and posture —** Sit in a chair with good back support and armrests. Adjust the level of the chair so your feet are flat on the floor. A footrest may make you more comfortable. Sit in a relaxed, upright posture and avoid slouching forward or leaning far backward.

- **Viewing angle of the computer's display —** Tilt the display to find the best viewing angle. Also try adjusting the brightness setting of the display. Following these suggestions can reduce eye strain and muscle fatigue.

- **Lighting —** Choose a location where windows and lights do not create glare or reflection on the display. Use indirect lighting to avoid bright spots on the display. You can purchase accessories for your display that help reduce glare. Proper lighting adds to your comfort and work effectiveness.

- **Placement of an external display —** When using an external display, set the display at a comfortable viewing distance. Make sure the display screen is at eye level or slightly lower when you are sitting in front of the monitor.

Storing Your Computer

- Do not use or store your computer in a location subject to:
  - Heat sources, such as radiators or air ducts
  - Direct sunlight
  - Excessive dust
  - Moisture or rain
  - Mechanical vibration or shock
  - Strong magnets or speakers that are not magnetically shielded
  - Ambient temperature higher than 95ºF (35ºC) or less than 40ºF (5ºC)
  - High humidity
- Do not place electronic equipment near your computer. When running, the computer's electromagnetic field may cause other electronic equipment in close proximity to malfunction.
- Provide adequate air circulation to prevent internal heat buildup. Do not place your computer on porous surfaces such as rugs or blankets, or near materials such as curtains or draperies that may block ventilation. Leave a space of at least 8 inches (20 cm) behind the back of the computer.
- If the computer is brought directly from a cold location to a warm one, moisture may condense inside your computer. In this case, allow at least one hour before turning on your computer. If any problems occur, unplug your computer, and contact your Sony Service Center.
- The computer uses high-frequency radio signals and may interfere with radio or TV reception. Should this occur, move the computer a suitable distance away from the radio or TV.
- Do not drop the computer or place heavy objects on top of the computer.

Using Cables and Connections

- Use only specified peripheral equipment and interface cables.
- Do not use cut or damaged connection cables.
- If the telephone company makes a service call to your home or office and determines that your computer is responsible for a problem, the telephone company may bill you for the service call. Also, if you do not disconnect your computer when it is adversely affecting a telephone line, the telephone company has the right to disconnect your service until you correct the problem.

Cleaning Your Computer

- Clean the computer with a soft, dry cloth or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder, or solvent such as alcohol or benzine, as these may damage the finish of your computer. You can use canned compressed air specifically for computers to remove dust.

- If a solid object falls onto the computer or a liquid leaks into the computer, immediately turn off and unplug the computer. It is best to have the computer checked by qualified personnel before you use it again.

- Avoid rubbing the LCD screen as this can damage the screen. Use a soft, dry cloth to wipe the LCD screen or canned compressed air.

- Always disconnect the power cord before cleaning the computer.

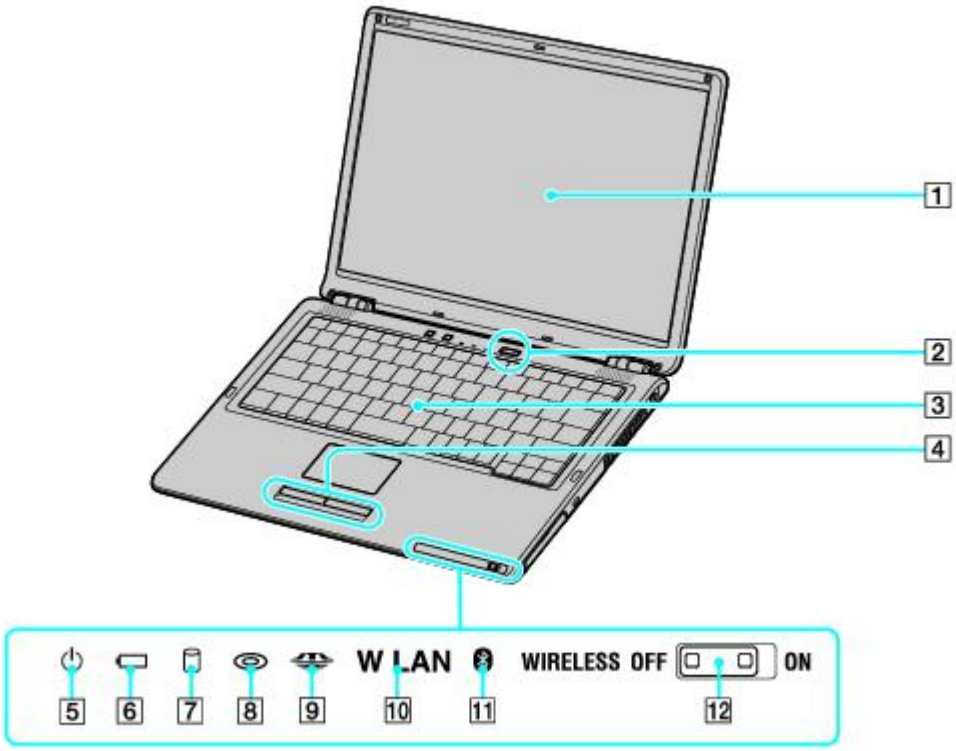
Handling the LCD Screen

- Direct sunlight can damage the LCD. Be careful when using the computer near a window.
- Do not scratch the LCD or exert pressure on it. This can cause a malfunction.
- Using the computer in low temperature conditions may produce a residual image on the screen. This is not a malfunction. When the computer returns to normal temperature, the screen returns to normal.
- The screen becomes warm during operation. This is normal and does not indicate a malfunction.
- The LCD is manufactured using high-precision technology. You may, however, see tiny black points and/or bright points (red, blue, or green) that continuously appear on the LCD. This is a normal result of the manufacturing process and does not indicate a malfunction.

Locating Controls and Ports

Congratulations on your purchase of the Sony® VAIO® computer. Sony has combined leading-edge technology in audio, video, computing, and communications to provide state-of-the-art personal computing.

Front



1 Computer screen (LCD)

2 Power button

3 Keyboard

4 Left and right buttons

5 Power indicator

6 Battery indicator

7 Hard disk drive indicator

8 Optical drive indicator

9 Memory Stick® media indicator

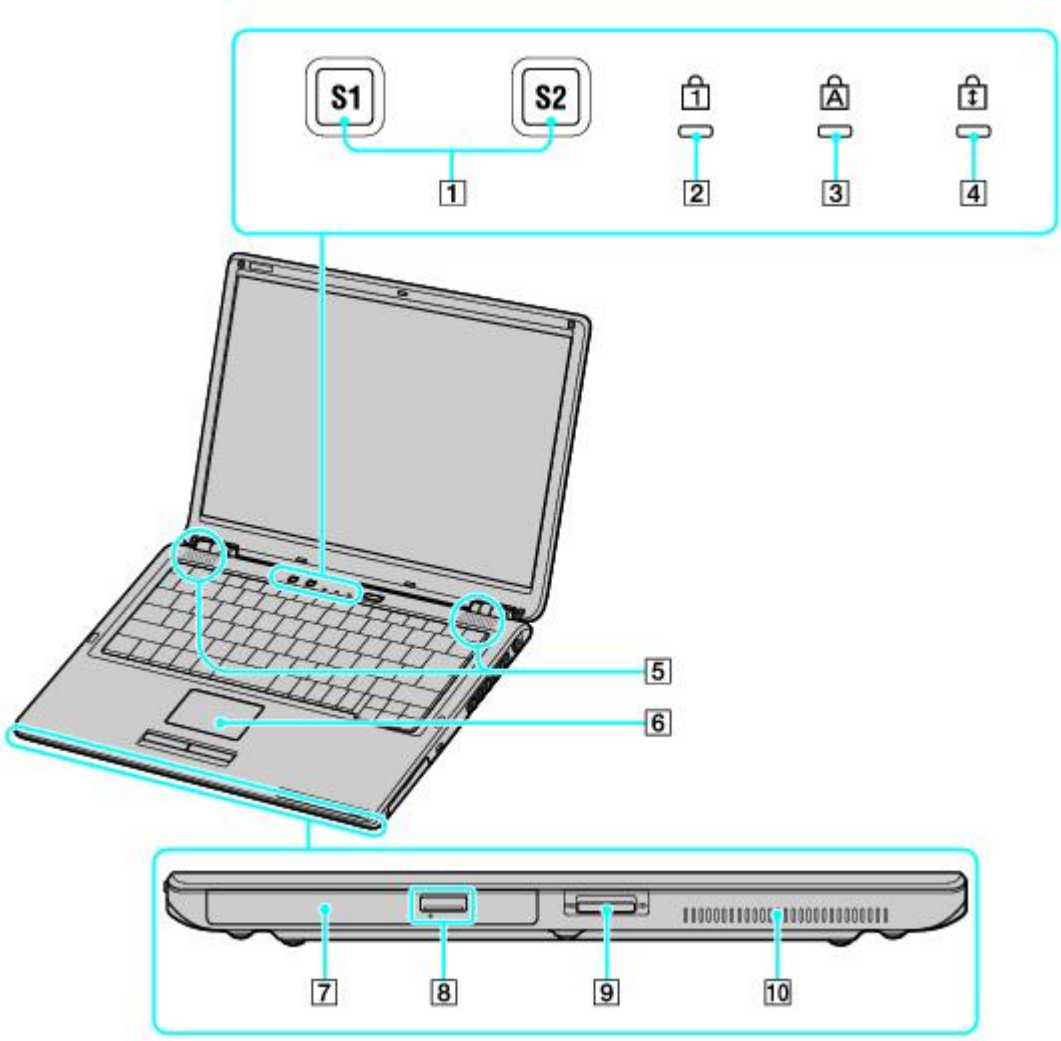
10 Wireless LAN indicator[1]

11 Bluetooth® indicator[1]

12 Wireless switch[1]

[1] Wireless LAN and Bluetooth capabilities are available on selected models only.

Front



1 S1 and S2 programmable buttons **6** Touch pad

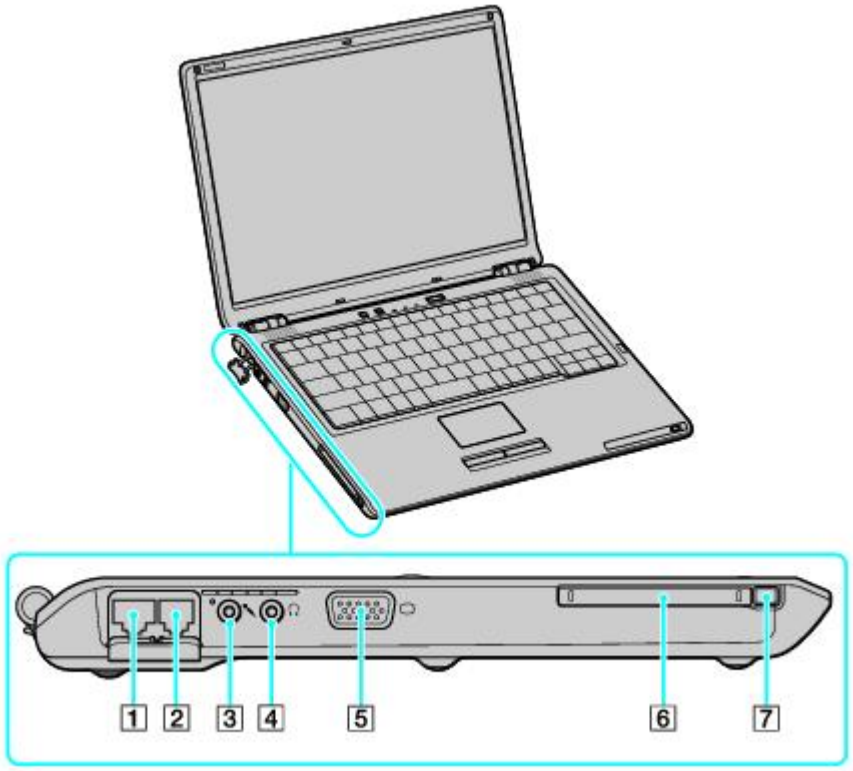
2 Num lock indicator **7** Optical drive

3 Caps lock indicator and manual eject hole **8** Optical drive eject button

4 Scroll lock indicator **9** Memory Stick® media slot

5 Speakers **10** Air vent

Left



1 Network (Ethernet) port **5** Monitor (VGA) port

2 Modem jack **6** PC Card slot

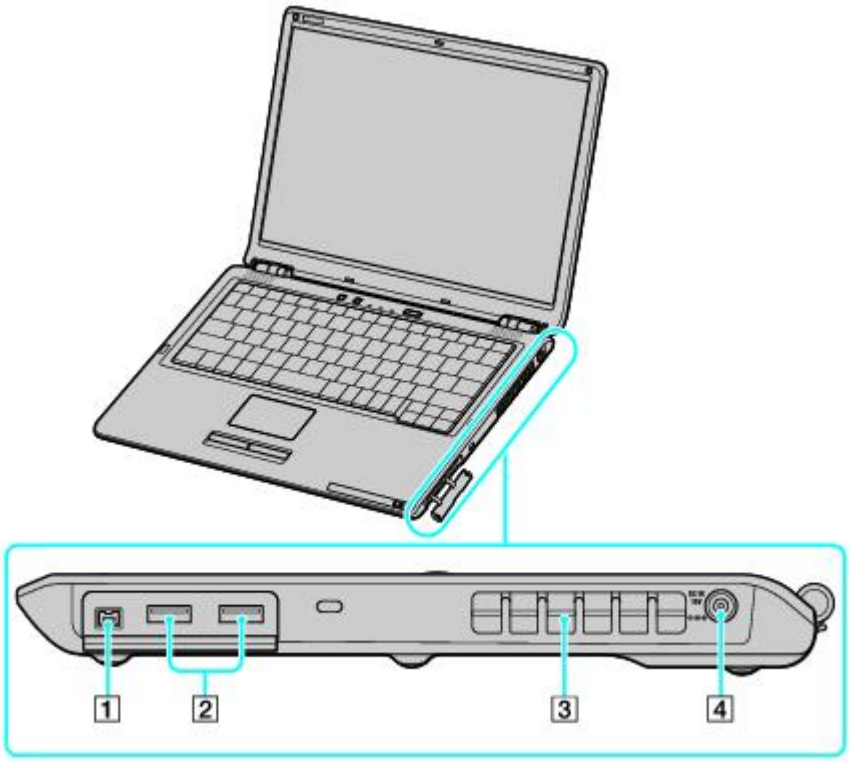
3 Microphone jack **7** PC Card eject button

4 Headphone jack

Gently pull the protective tab away from the computer to find the Ethernet port and modem jack.

Only connect 10BASE-T or 100BASE-TX cables to the Network (Ethernet) port. Do not connect any other type of network cable or any telephone line to this port. Connecting cables other than those listed above may result in an electric current overload and could cause a malfunction, excessive heat, or fire in the port. To connect the unit to a network, see Network Connections or contact your network administrator.

Right

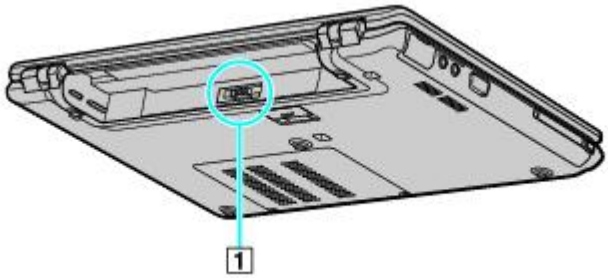


1 i.LINK® (IEEE 1394) S400 port **3** Air Vent

2 USB 2.0 ports **4** DC IN port

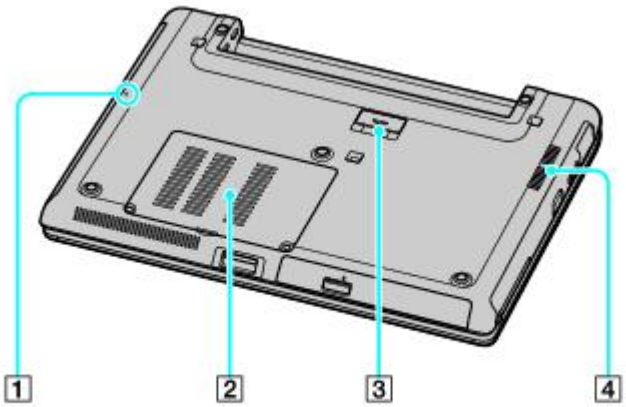
Gently pull the protective tab away from the computer to find the i.LINK S400 and USB 2.0 ports.

Back



1 Battery connector

Bottom



1 Reset button **3** Port replicator connector

2	Memory module cover	**4**	Air vent

About the Indicator Lights

Indicator	Function
Power	Turns on when the power to the computer is on, blinks in Standby mode, and turns off when the computer is in Hibernate mode or off.
Battery	Turns on when the computer is using battery power, blinks when the battery is running out of power, double-blinks when the battery is charging.
Optical Drive	Turns on when data is read from or written to the optical drive. Do not enter Standby mode or turn off the computer when this indicator is on.
Memory Stick®	Turns on when data is read from or written to the Memory Stick media. (Do not enter Standby mode or turn off the computer when this indicator is on.) When the indicator is off, the Memory Stick media is not being used.
Hard Disk	Turns on when data is read from or written to the hard disk. Do not enter Standby mode or turn off the computer when this indicator is on.
Num Lock	Press this key to activate the numeric keypad. Press it a second time to deactivate the numeric keypad. The numeric keypad is not active when the indicator is off.
Caps Lock	Press this key to type letters in uppercase. Letters appear in lowercase if you press Shift while the indicator is on. Press the key a second time to turn off the indicator. Normal typing resumes when the Caps Lock indicator is off.
Scroll Lock	Press this key to change how you scroll the display. Normal scrolling resumes when the Scroll Lock indicator is off. The Scroll Lock key functions differently depending on the program you are using and does not work with all programs.
Bluetooth®[1] Wireless LAN[1]	Turns on when the wireless switch is set to ON and Bluetooth technology is enabled. Turns on when the wireless LAN function is running.

[1] On selected models only.

See Internet and Network Connections for more information about Bluetooth and wireless technology.

Using S1 and S2 Buttons

The S1 and S2 buttons are pre-programmable buttons that enable you to quickly enter a power saving mode, switch between displays, launch an application, alter the sound, or increase the screen's brightness.

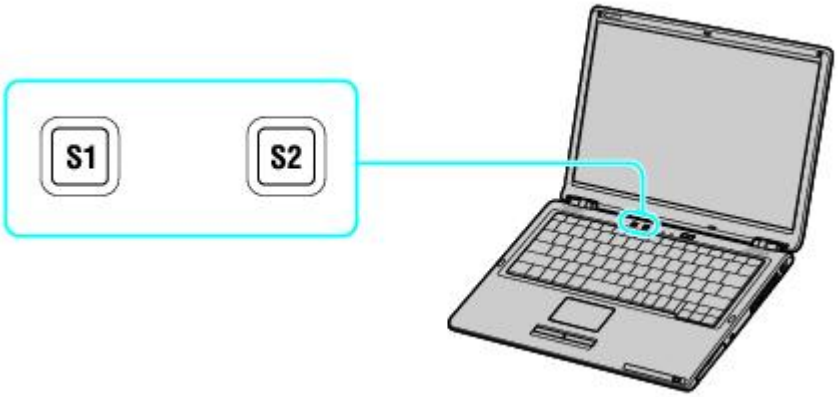
About the S1 and S2 buttons

The following information shows where the S1 and S2 buttons are located, and briefly describes their functionality.

Locating the S1 and S2 buttons

The S1 and S2 buttons are located just above the keyboard.

Locating the S1 and S2 buttons

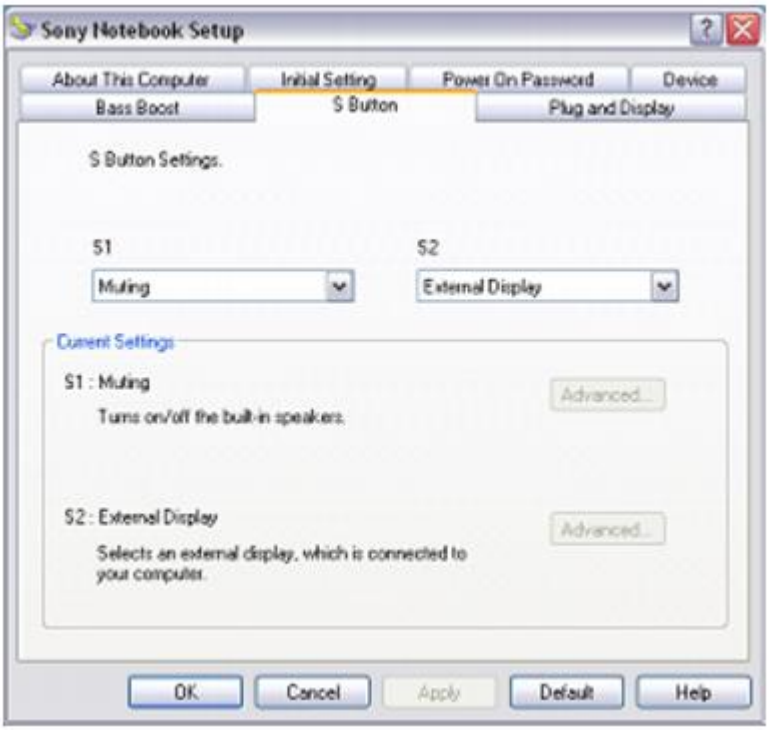


Using the S1 and S2 buttons

To assign a function to the button

1. Click **Start**, and point to **All Programs** and then **Sony Notebook Setup**.
2. From the **Sony Notebook Setup** submenu, click **Sony Notebook Setup**.
3. Click to select the **S Button** tab.

Sony Notebook Setup



4. Click to select a key assignment from the S1 or S2 drop-down menu.
5. Click **Apply**.

Depending on the key assignment, you may be able to customize the S1 and S2 buttons further by clicking **Advanced**, if it becomes available, in the **Current Settings** box.

Using the Touch Pad

Describing the Touch Pad

A pointing device called a touch pad is located in front of the keyboard. You can point to, select, drag, and scroll objects on the screen using the built-in touch pad.

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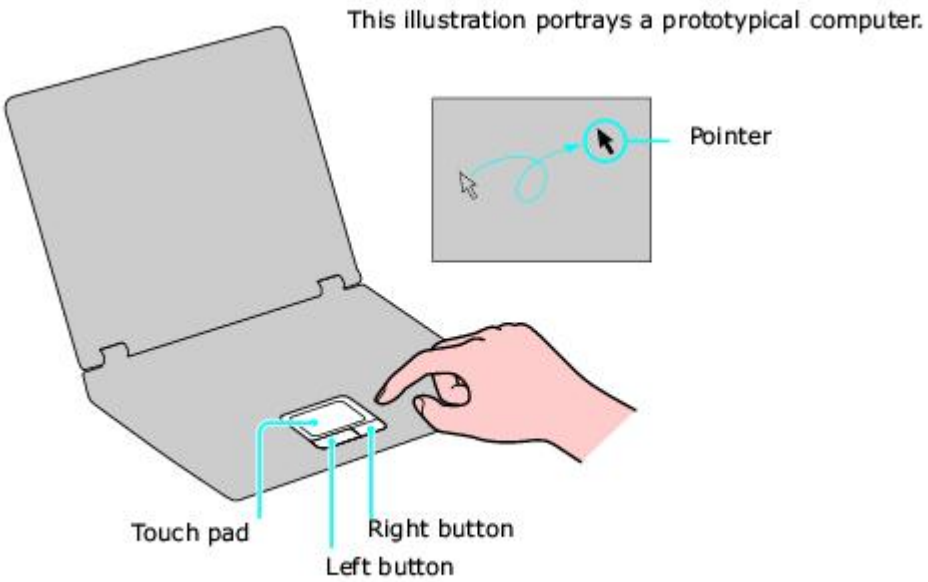
A pointing device called a touch pad is located in front of the keyboard. You can point to, select, drag, and scroll objects on the screen using the built-in touch pad.

Locating and using the touch pad

Locating the Touch Pad



Touch Pad Action	Description
Sliding one finger	Equivalent to using a mouse to place the pointer on an item.
Tapping once	Equivalent to pressing the left button once.
Tapping twice	Equivalent to pressing the left button twice.
Sliding one finger while pressing the left button	Equivalent to using the mouse to drag an item.
Moving your finger along the right edge of the touch pad	Equivalent to scrolling vertically. (The scroll function is available only with programs that support a touch pad scroll feature.)
Moving your finger along the bottom to scroll horizontally	Equivalent to scrolling horizontally. (The scroll function is available only with programs that support a touch pad scroll feature.)

Customizing the touch pad

Sony Notebook Setup lets you customize, enable, or disable the touch pad. Open the Mouse Properties dialog box to set your touch pad and mouse preferences, such as changing pointers, enabling or disabling the tapping feature, clicking both buttons simultaneously, and adjusting the touch pad speed.

To customize the touch pad and mouse

- Right-click the **Touchpad** icon on the **Taskbar Notification** area, and click **Mouse Properties** from the shortcut menu. The **Mouse Properties** dialog box appears.

To enable the touch pad

1. Press the **Windows** key . The **Start** menu appears.
2. Press **P** until **All Programs** is selected, and press **Enter**.
3. Press **S** until **Sony Notebook Setup** is selected, and press **Enter**. A submenu appears with **Sony Notebook Setup** preselected.
4. Press **Enter**. The **Sony Notebook Setup** dialog box appears.
5. Press the **Right Arrow** key to select the **Device** tab.
6. Press the **Tab** key to select the **Default** button, and press **Enter**. A pop-up window appears.
7. Press the **Left Arrow** key to select **OK**, and press **Enter**. The **Enable Touchpad** option is automatically selected.
8. Press the **Tab** key to select the **Apply** button, and press **Enter**.
9. Click **OK**.

To disable the touch pad

1. Click **Start** on the Windows® taskbar, and point to **All Programs**.
2. Point to **Sony Notebook Setup**, and click **Sony Notebook Setup** in the submenu. The **Sony Notebook Setup** dialog box appears.
3. Click the **Device** tab.
4. In the left panel, click to cancel the **Pointing Device** check box.
5. Click **Apply**. A Sony Notebook Setup message appears.
6. Click **Yes**.

Using Memory Stick Media

Your VAIO® computer is equipped with a Memory Stick® media slot that supports certain types of Memory Stick® media.

About Memory Stick media

Memory Stick® media are a compact, portable, and versatile data storage media designed for exchanging and sharing digital data with compatible devices. You can store different data formats on a single Memory Stick media. The following types of Memory Stick media are available, but compatibility with your computer can vary.

- MagicGate Memory Stick media — Provides copyright protection with authentication and encryption, using Sony® MagicGate technology. Authentication ensures that protected content is only transferred between compliant devices and media. Protected content can be recorded and transferred in an encrypted format to prevent unauthorized duplication or playback.

- Memory Stick PRO media — Provides MagicGate copyright protection and high-speed transfer features when used with compatible Memory Stick PRO devices. VAIO® computers support Memory Stick PRO media for data storage purposes only. Currently, MagicGate technology features, such as authentication and encryption, are not available.

- Memory Stick media — Provides data storage only. The Memory Stick media does not provide MagicGate technology or high-speed data transfer.

Currently, Sony® SonicStage® and OpenMG software are not compatible with Memory Stick PRO media. Sony suggests using only MagicGate Memory Stick media to store and transfer any data created with SonicStage or OpenMG software.

Visit the Sony Computing Support Web site at http://www.sony.com/pcsupport regularly for the latest information on Memory Stick PRO media.

✍ Memory Stick media may not support playback of some video files directly from the media. Copy the video file to your hard disk drive and then play back the file.

Inserting Memory Stick media

Before using Memory Stick® media, back up important data. The media slot accommodates only one Memory Stick media at a time.

To insert Memory Stick media

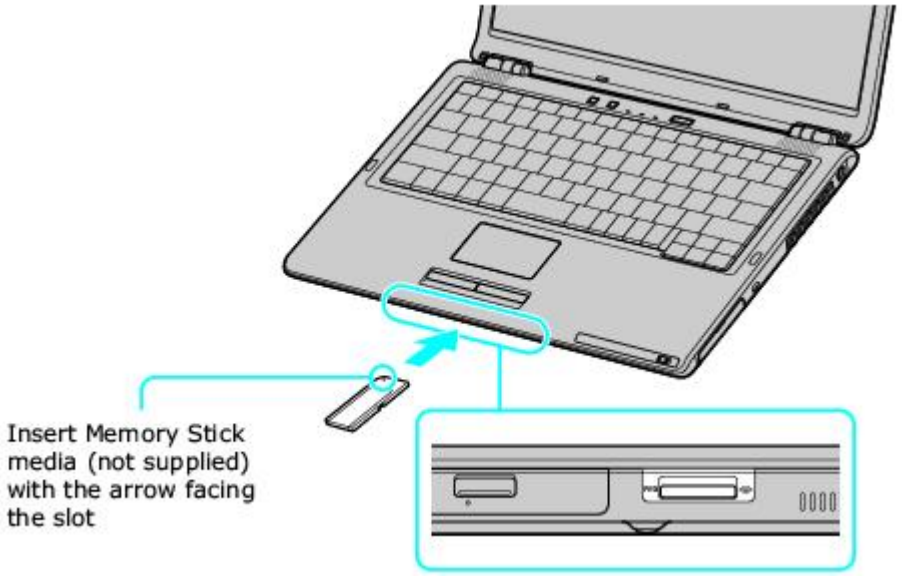
1. Insert the Memory Stick media with the arrow facing up and toward the Memory Stick media slot.

   Do not insert more than one Memory Stick media into the Memory Stick media slot. Inserting the media improperly may damage the computer.

   If you are using Memory Stick® Duo media, attach the media to its adapter before inserting it into the Memory Stick media slot.

2. Carefully slide the Memory Stick media into the slot until it clicks in place. The Memory Stick media indicator briefly blinks.

Inserting Memory Stick Media



Viewing the contents

Depending on the model you purchased, the Sony Memory Stick window may appear when you insert a Memory Stick® media. From this window, you can choose to view, print, copy or organize your images or data stored on the Memory Stick media. If the Sony Memory Stick window does not appear when you insert your Memory Stick media, then follow these steps:

To view the contents

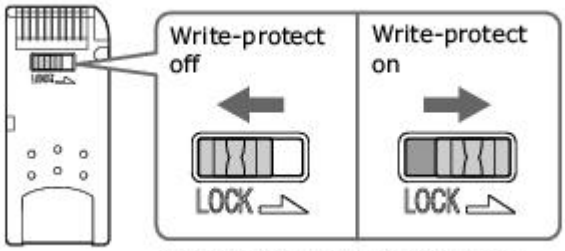
1. From the **Start** menu, click **My Computer**. The **My Computer** window appears.
2. Click **Sony MemoryStick**. The **Sony MemoryStick** window appears, displaying the contents stored on the Memory Stick media.

Protecting data on Memory Stick media

Some Memory Stick® media are equipped with a write-protect tab[1]. The write-protect tab prevents accidental changes to information recorded on your Memory Stick media. When you slide the write-protect tab to the LOCK position, your Memory Stick media is write-protected. You cannot delete, copy, or save information on the media while the write-protect tab in the LOCK position. When you slide the tab to the un-LOCK position, you can write to or modify your Memory Stick media's contents.

Write-protect off	Data can be saved on the Memory Stick media.
Write-protect on	Data can be read from but not saved on the Memory Stick media.

Using the Write-Protect Tab



(Back of Memory Stick media)

[1] Some Memory Stick media do not have a write-protect tab, and the location or position of the write-protect tab may vary, depending on the type of Memory Stick media. See the information sheet provided with your Memory Stick media.

Formatting Memory Stick media

Memory Stick® media is formatted for immediate use when you purchase it. If you need to reformat Memory Stick media, use the Memory Stick Formatter that is provided with the media. For more information about using Memory Stick Formatter, refer to Formatter Help.

Formatting Memory Stick media erases all data, including music data, previously saved to it. Before you reformat Memory Stick media, confirm that the media does not contain files you want to keep. Back up important data before formatting the media.

To format Memory Stick media

1. Insert the Memory Stick media into the Memory Stick media slot. See To insert Memory Stick media for more information.
2. From the **Start** menu, click **All Programs**, select **Memory Stick Utility,** and click **Memory Stick Formatter**. The **Memory Stick Formatter** window appears.
3. Click **Start Format**, and follow the on-screen directions.
4. After formatting, click **Exit**.

Removing Memory Stick media

If the Memory Stick® media is removed prematurely, a blue screen with a message may appear prompting you to continue or exit. Reinsert the media into the slot and press **Enter** to continue. This enables the media to finish reading or writing data.

To remove Memory Stick media

1. Wait a minimum of 10 seconds after the Memory Stick media finishes reading or writing data before removing the media.
2. Make sure the access light is off.
3. Push the Memory Stick media in toward the computer.
4. When the Memory Stick media ejects, pull it out.

Be careful when removing the Memory Stick media, as it may not eject completely from the slot.

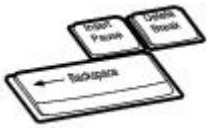
Using the Keyboard

Although your computer's keyboard is very similar to a typewriter's keyboard, you can use the additional keys on the computer's keyboard to perform specific computer-related tasks.

Using the Keyboard

Although your computer's keyboard is very similar to a typewriter's keyboard, you can use the additional keys on the computer's keyboard to perform specific computer-related tasks.

Key descriptions

Key	Description
Numeric keypad	Contains the keys found on a typical calculator. Use the numeric keypad area to type numbers or to perform mathematical calculations, such as addition and subtraction. Numbers appear on the front beveled edge of the numeric keys. Press the Num Lock key to activate the numeric keypad. (When you do so, the Num Lock indicator light turns on.) Press the Num Lock key again to deactivate the numeric keypad.
Arrow keys	The Left, Right, Up, and Down arrow keys move the pointer on the screen. They also function as the Home, End, Page Up, and Page Down keys, respectively, when the Fn key is pressed.
Correction keys	 The Insert, Back Space, and Delete keys enable you to make corrections to keystrokes.
Function keys	The 12 function keys along the top of the keyboard are used to perform designated tasks. For example, in many programs, F1 is the Help key. The task associated with each function key may vary from one program to the next.
Escape key	The Esc (Escape) key is used to cancel commands.
Print Screen key	The Print Screen key takes an electronic snapshot of the screen and moves it to the Clipboard. You can then paste the screen shot into a document and print it.
Operator keys	

(Ctrl, Alt, Shift keys)

Several keys are always used with at least one other key: Ctrl, Alt, and Shift. When held down with another key, the Ctrl (Control) and Alt (Alternate) keys offer another way to give commands. For example, in many programs, instead of choosing the Save command from a menu, you can hold down **Ctrl** and press **S** (referred to as **Ctrl+S**). The Shift key operates the same way as on a typewriter; it is used to produce capital letters or special symbols, such as @ and $.

Windows key

The key with the Microsoft® Windows® operating system logo displays the Start menu; it is the equivalent of clicking Start on the taskbar. See Combinations and functions with the Windows key for more information.

Fn key

The Fn key is used in combination with other keys to issue commands. See Combinations and functions with the Fn key for more information.

Applications key

The Applications key displays a shortcut menu of context-sensitive choices. Pressing this key is the equivalent of clicking the right mouse button.

Combinations and functions with the Windows key

Combination	Function
+F1	Displays the VAIO Help and Support Center window.
+Tab	Switches the selected button on the taskbar.
+D	Displays the desktop.
+E	Displays the Windows Explorer window.
+F	Displays the Search Results window, where you can find a file or folder. This is the equivalent of selecting Search from the Start menu.
+Ctrl+F	Displays the Search Results - Computers window, where you can locate other computers. This is the equivalent of selecting Search, and then Computer from the Start menu.
+M	Minimizes all displayed windows.
Shift+ +M	Returns all minimized windows to their previous size.
+R	Displays the Run window. This is the equivalent of selecting Run from the Start menu.
Fn+ +Insert	Displays the System Properties window. This is the equivalent of selecting Control Panel, and then System from the Start menu.

Combinations and functions with the Fn key

Combinations/

Feature	Function
Fn+F2	Toggles the headphones and built-in speakers off and on. An on-screen display appears notifying you when a change occurs.
Fn+F3	Decreases the speaker volume. An on-screen display appears notifying you when a change occurs.
Fn+F4	Increases the speaker volume. An on-screen display appears notifying you when a change occurs.
Fn+F5	Decreases the brightness of the computer screen (LCD). An on-screen display appears notifying you when a change occurs.
Fn+F6	Increases the brightness of the computer screen (LCD). An on-screen display appears notifying you when a change occurs.
Fn+F7	Toggles the display between the computer screen (LCD), a connected external display, and both the LCD and an external display. You can also select the Setup option to adjust the Plug and Display settings. Select one display (LCD or an external display) when playing a DVD. An on-screen display appears notifying you when a change occurs.
Fn+F12	Puts the system into Hibernate mode, a power management state. To return the system to normal operating mode, press the power button. Hibernate mode consumes the lowest level of power.
Fn+Esc	Puts the system into Standby mode, a power management state. To return the system to the active state, press any key or the power button.

Connecting a Mouse and Keyboard

Your computer is compatible with many popular mice and keyboards. To function properly, the device you connect must be compatible with the Microsoft® Windows® operating system installed on your computer. For information about your computer's built-in keyboard and key functions, see Key descriptions.

Connecting a mouse or keyboard

Your computer can be on or off when connecting a universal serial bus (USB) mouse or keyboard. If you connect the mouse or keyboard when the computer is on, you may need to restart the computer for it to recognize the device. See What do I do if the computer doesn't recognize the mouse? for more information.

To connect a USB mouse or keyboard to your computer

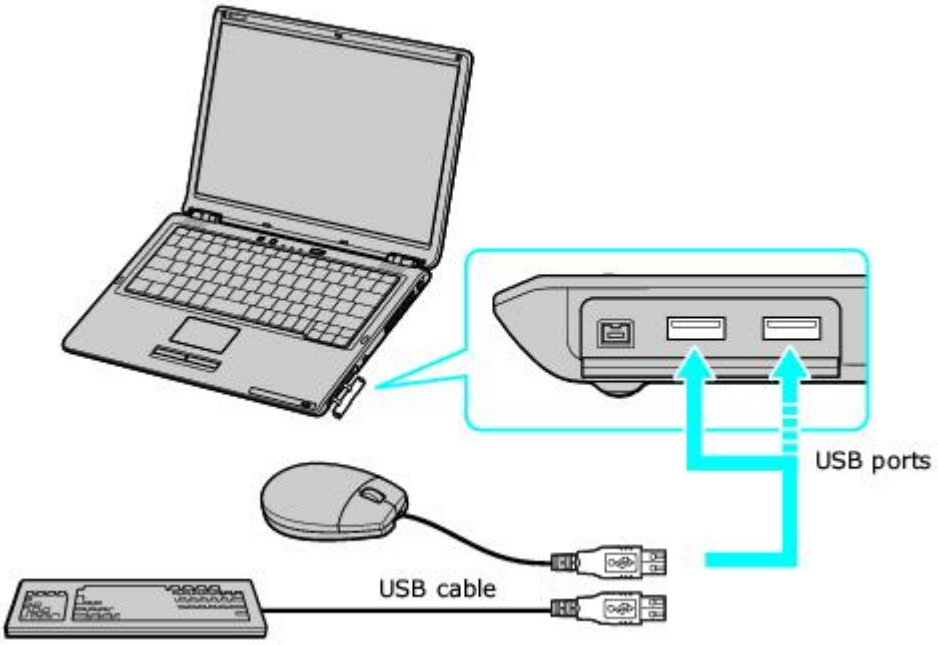
1. Plug the USB cable into the USB port . See Locating Controls and Ports.

   One USB port supports one USB connection.

2. If the **New Hardware Wizard** appears, follow the on-screen instructions to complete the installation process.

Although the New Hardware Wizard guides you through the software installation, some devices require separate driver software installation. See the instructions that accompanied your mouse or keyboard for more information

Connecting a USB Mouse or Keyboard



Disconnecting a mouse or keyboard

You can disconnect a USB mouse or keyboard when the computer is on or off. Disconnecting the mouse or keyboard when the computer is in a power saving mode (Standby or Hibernate) may cause the computer to malfunction.

To disconnect a mouse or keyboard

- Unplug the USB cable from the USB port.

Using the Multilingual User Interface Language Option

(Microsoft® Windows® XP Professional only) After you have initially setup your new VAIO® computer, you can change the language displayed in Microsoft® Windows® XP Professional operating system. The multilingual user interface (MUI) language option changes the text controlled by Windows XP Professional operating system. Menus, help files, and icons generated by Windows XP Professional are shown in your selected language. All other programs are displayed in English as the default language.

The multilingual user interface language option is not designed to replace a localized version of the Microsoft® Windows® XP Professional operating system. Under certain conditions, some third-party software applications may not function properly.

To Change the Language Option

1. Click **Start** on the Windows® taskbar, and then click **Control Panel**.
2. Click **Date, Time, Language and Regional Options**, and then click **Regional and Language Options**. The **Regional and Language Options** dialog box appears.
3. Click the **Languages** tab.
4. From the **Language used in menus and dialogs** shortcut menu, select the desired language:
   - English
   - Español
   - Português
   - Français
5. Click **Apply**. The **Change Regional Options** shortcut window appears.
6. Click **OK**.
7. Click **Start** on the Windows® taskbar, and then click **Logoff**.

Additional users can also change to their desired language(s) without affecting your existing language settings.

Changing Numbers, Currency, Time, and Date Formats

You can change your operating system's number, currency, time, and date formats to coordinate with your chosen country or language settings.

To change these formats

1. Click **Start** on the Windows taskbar, and then click **Control Panel**.
2. Click **Date, Time, Language and Regional Options**, and click **Regional and Language Options**. The **Regional and Language Options** dialog box appears.
3. From the **Regional Options** tab, click the **Standards and formats** shortcut menu to view the available country or language choices. Select the desired country or language.
4. Click **Customize** to change the number, currency, time, and date settings.
5. Click **Apply**.
6. Click **OK**.
7. Click **OK**.

Changing the Window Design of Sony Programs

This feature changes the appearance, such as color, of certain Sony programs.

To change the window design

1. Click **Start**, and then **Control Panel**.
2. In the left panel, click **Switch to Classic View**.
3. Double-click **UI Design Selector**.
4. Click **<<** or **>>** to view the designs.
5. Click **Apply** to select a design that appears in the center window. The **UI Design Selector** window design changes. The window design for your Sony software will match the **UI Design Selector** window.
6. Click **OK**.

Powering Your Computer

Your VAIO® computer comes with a battery and an AC adapter. This chapter explains how to install and use these supplied accessories to power your computer. It also describes ways you can efficiently utilize the battery as a power source.

Using AC Power

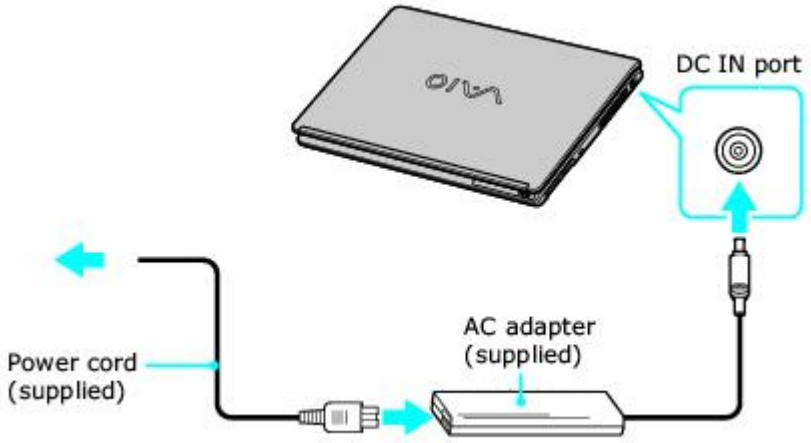
The supplied battery is not charged when you receive your computer. To charge the battery and begin using the computer immediately, insert the battery into the computer and use the supplied AC adapter as a power source. The computer automatically charges the installed battery while it uses AC power.

Connecting the AC adapter

To connect the AC adapter

1. Plug the AC adapter cable into the DC IN port.

Connecting the AC Adapter to the Computer



2. Plug the power cord into the AC adapter and an AC outlet.

Use only the supplied AC adapter with your computer.

Turning on the computer

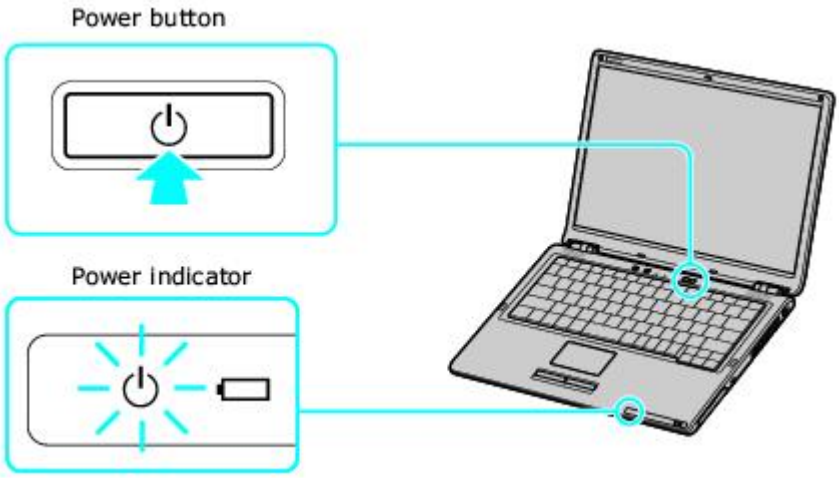
To turn on the computer

1. Hold the bottom of the computer firmly with one hand, and lift the LCD screen lid with the other hand.

Opening the Computer

2. Press the power button until the power indicator turns on.

Turning on the Computer



If you press and hold the power button, the computer turns off.

3. Adjust the brightness of the LCD screen, if necessary.
   - Press the **Fn** and **F6** keys to increase brightness.
   - Press the **Fn** and **F5** keys to decrease brightness.

Using the Battery

Your computer, depending on the model you purchased, may come equipped with one battery bay and one multipurpose bay that supports a second battery. If your computer comes with two bays, you can purchase a second rechargeable battery to extend your computing time. For information on how to extend the life of the battery, see Conserving Battery Power for more information.

✍ When operating your computer on battery power, your computer's CPU speed is reduced.

✍ The battery that comes with your computer is not fully charged at the time of purchase.

✍ This computer is designed to operate only with genuine Sony batteries.

Installing the Battery

The supplied battery is not charged when you unpack it. To charge it for future use, install the battery, and then connect the AC adapter to power your computer. The battery charges from AC power regardless if the computer is on or off. For information on how to extend the life of the battery, see Conserving Battery Power.

When operating your computer on battery power, your computer's CPU speed is reduced.

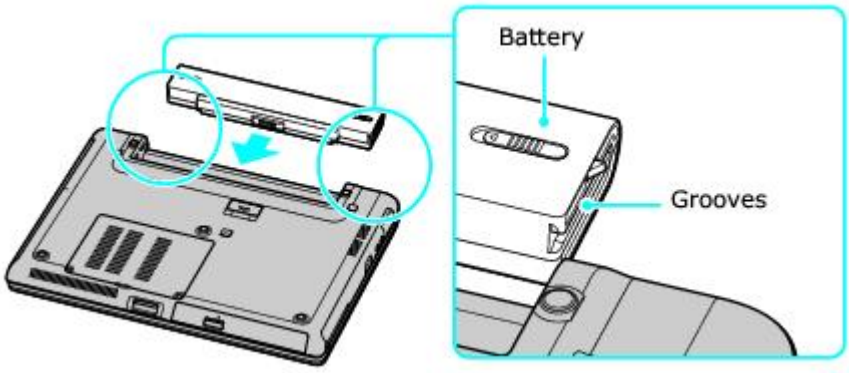
This computer is designed to operate only with genuine Sony batteries.

Inserting a battery

To insert a battery

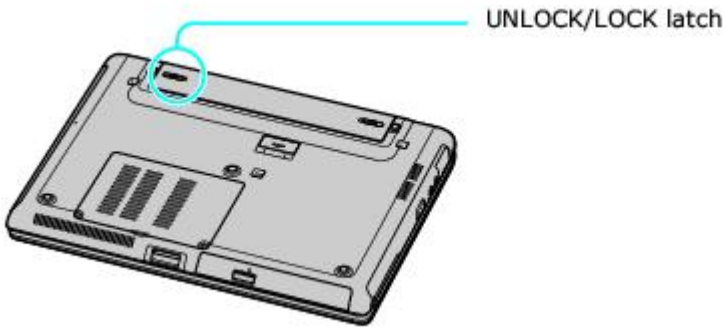
1. Turn the computer over, and slide the **UNLOCK/LOCK** latch on the bottom of the battery to the **UNLOCK** position.
2. Align the grooves on the battery with the tabs on the back of the computer.

Inserting the Battery



3. Slide the battery into the computer until it clicks into place.
4. Slide the **UNLOCK/LOCK** latch into the **LOCK** position.

Locking the Battery



5. Connect the AC adapter to the computer. See To connect the AC adapter.

If a port replicator is attached to your computer, do not insert or remove the battery. Lifting and turning the computer with the port replicator attached could cause a temporary loss of power.

Some programs and peripheral devices prevent the system from automatically entering Hibernate mode. If you are using battery power, save your data frequently to avoid data loss and manually activate a power saving mode. See Using power saving modes for more information.

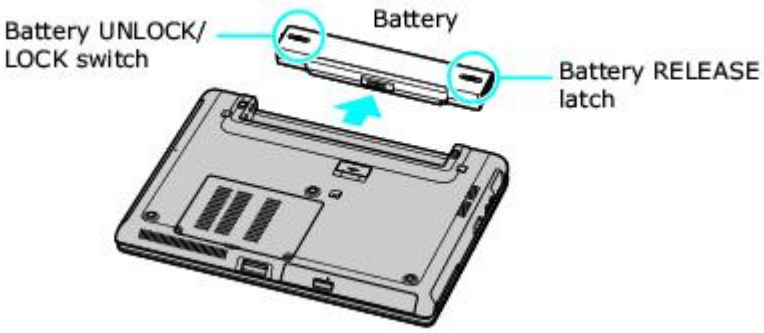
Removing a battery

If you are not using the computer for an extended period of time, remove the battery from the computer to avoid damaging the battery.

To remove a battery

1. Make sure the computer is turned off.
2. Turn the computer over, and slide the **UNLOCK/LOCK** latch on the bottom of the battery to the **UNLOCK** position.
3. Slide and hold the **RELEASE** latch while you pull the battery away from the computer.

Removing a Battery



Charging a battery

You will need to charge the battery if battery power drops below 10 percent or you have not used the battery for a long time. The lithium-ion battery supplied with your computer may be recharged at any time, whether you wait until the battery is completely or partially discharged. Charging a partially discharged battery does not affect battery life. If you charge the battery and find that battery power is still low, the battery may be reaching the end of its life, and you may need to replace it.

✍ The battery supplied with your computer is not charged at the time of purchase.

To charge a battery

You can charge the battery when the computer is on or off. However, the battery will charge faster when the computer is off. Charging the battery takes several hours.

✍ Charge the battery at temperatures between 50°F and 80°F (10°C to 30°C). Lower temperatures require more time to charge.

1. Insert the battery into the battery bay.
2. Connect the AC adapter to the computer. The computer automatically charges the battery as long as the computer is using AC power.

The battery indicator blinks while the battery charges. The battery indicator stops blinking when the battery is fully charged.

✍ When using two batteries, the battery you insert first charges first. The second battery you insert begins charging when the first battery is 85 percent charged.

Battery indicator status	Description
On	The computer is using battery power.
Single blink	The battery is running out of power.
Double blink	The battery is charging.
Off	The computer is using AC power.

Notes on batteries

- Never leave the battery in temperatures above 140°F (60°C), such as under direct sunlight or in a car parked in the sun.
- While the battery is in use or being discharged, the battery heats up. This is normal and is not cause for concern.
- Keep the battery away from heat sources.
- Keep the battery dry.
- Do not open or disassemble the battery.
- Do not expose the battery to any mechanical shock.
- Battery life is shorter in a cold environment because of decreased battery efficiency at low temperatures.
- This computer is designed to operate only with genuine Sony batteries.

Conserving Battery Power

You may use the power saving modes and power schemes to conserve battery power. Conserving battery power may significantly extend your computing time, depending on how you use your computer.

Using power saving modes

In addition to the normal operating mode, which allows you to turn off specific devices to save power, your computer has two distinct power saving modes: Standby and Hibernate. Use the Standby and Hibernate power saving modes to override a power profile setting and initiate immediate action.

- **Standby** — Saves the state of the system and peripheral devices in memory (RAM). Power consumption is reduced to a minimum. The system remains on, and the computer screen (LCD) is off.

- **Hibernate** — Saves the state of the system and peripheral devices to the hard disk. Power consumption is reduced to the lowest possible setting without being completely off. Hibernate mode consumes the lowest level of power. Your computer enters Hibernate mode when the remaining battery charge drops below 5 percent, regardless of the setting you select.

Since some programs and peripheral devices prevent the system from entering Hibernate mode, save your data frequently to avoid data loss.

To activate Standby mode[1]

1. Press the **Fn** and **Esc** keys. The power indicator blinks in this mode.

2. Press any key to return to normal mode.

To activate Hibernate mode

1. Press the **Fn** and **F12** keys, or press the power button and release it immediately. Do not move the computer until the power indicator turns off.

2. Press the power button to return to normal mode.

If your computer does not activate Hibernate mode, see Why doesn't my computer enter Hibernate mode? for more information.

[1] The Fn+Esc key combination works on selected models only.

Using power schemes

You can use the preset power schemes or you can customize the power profiles to conserve power. By using the power schemes and power profiles, you control the power supplied to different devices, such as the computer screen (LCD) and the hard disk drive, in your computer. You also control when the computer activates a power saving mode (Standby or Hibernate).

To select a power scheme

1. Click **Start** on the Windows® taskbar, and click **Control Panel**.
2. Click **Performance and Maintenance**, and click **Power Options**. The **Power Options Properties** window appears with the **Power Schemes** tab selected.
3. Select a power scheme from the drop-down menu in the **Power schemes** box. Each power scheme is preset to utilize your power supply efficiently, according to your computing functions. Select the power scheme that best explains how you want to use your computer.
4. Click **Apply**.

To create a power scheme

1. Click **Start** on the Windows® taskbar, and click **Control Panel**.
2. Click **Performance and Maintenance**, and click **Power Options**. The **Power Options Properties** window appears with the **Power Schemes** tab selected.

   You can also right-click the Power icon on the Windows® taskbar, and select **Adjust Power Properties** to open the **Power Options Properties** window.
3. Select your changes from the drop-down menus in the **Settings for....power scheme** box, and click **Save As** in the **Power schemes** box. The **Save Scheme** window appears.
4. Type a name for your customized power scheme, and click **OK**. The power scheme you created appears in the **Power schemes** box.

If you want to delete a power scheme, select the power scheme and click **Delete**. When the **Delete Scheme** window appears, click **Yes**.

To customize your power properties

1. Click **Start** on the Windows® taskbar, and click **Control Panel**.
2. Click **Performance and Maintenance**, and click **Power Options**. The **Power Options Properties** window appears.
3. Select the **Advanced** tab, and select your changes from the drop-down menus in the **Power buttons** box. See Using power saving modes for information on how Standby and Hibernate modes affect power consumption.
4. Click **Apply**.

To use VAIO Power Management

VAIO Power Management is a software program that enables you to further adjust the power settings on your computer. Once you have selected a power scheme under the Power Schemes tab, you can modify it in the VAIO Power Management tab to enhance your computer's operations.

1. Click **Start** on the Windows® taskbar, and click **Control Panel**.
2. Click **Performance and Maintenance**, and click **Power Options**. The **Power Options Properties** window appears.
3. Select the **VAIO Power Management** tab, and specify the options you want to adjust.
4. Click **Apply**.

For information about **VAIO Power Management**, click the **Help** button located toward the bottom of the VAIO Power Management tab. Alternately, click **Start**, select **All Programs**, then select **VAIO Power Management**, and click **VAIO Power Management Help**. The **Help for VAIO Power Management** file appears.

To set your battery alarm

You can change your computer settings to notify you when the battery power reaches a certain level.

1. Click **Start** on the Windows® taskbar, and click **Control Panel**.
2. Click **Performance and Maintenance**, and click **Power Options**. The **Power Options Properties** window appears.
3. Select the **Alarms** tab, and then select the type of alarm you want the computer to activate: a low or a critical battery alarm.
4. Drag the slider to the battery level at which you want the computer to activate the alarm. By default, the **Low battery alarm** is set to 10 percent.
5. Click **OK**.

To further customize your alarm settings, click **Alarm Action**. In this window, you can select the type of alarm you want the computer to activate and how you want the computer to respond to the alarm.

Locating power status information

Displaying the power status provides useful information, such as remaining battery life.

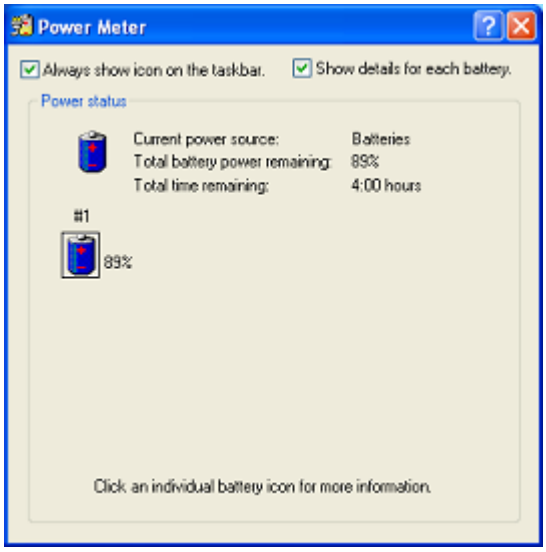
To view the Power Meter window

1. Double-click the **Power** icon. The **Power Meter** window appears. You can also rollover the Power icon to view the remaining battery charge.

Power icon	Power status
	Computer is using AC power.
	Computer is using AC power and charging the battery.
	Battery is charging.
	Battery is fully charged.
	Battery is discharging.
	No battery is inserted in the computer.

If the Power icon is not displayed on the Taskbar Notification area, see To display the Power icon on the taskbar.

Power Meter*



* The Power Meter window may appear slightly different on your computer, depending on the number of batteries your computer supports.

To display the Power icon on the taskbar

1. Click **Start** on the Windows® taskbar, and click **Control Panel**.
2. Click **Performance and Maintenance**, and click **Power Options**. The **Power Options Properties** window appears.
3. Select the **Advanced** tab, and then select **Always show icon on the taskbar** in the **Options** box. The power icon appears on the taskbar. See the power icon descriptions above for more information.

Internet Connections

This section describes the basic steps for setting up your dial-up or Ethernet connection to the Internet. The New Connection Wizard guides you through the process of connecting to the Internet and choosing an Internet service provider (ISP) or setting up an existing account. When you connect to the Internet, you can register your VAIO® computer, use online services, and gain access to Sony Computing Support.

Internet Connections

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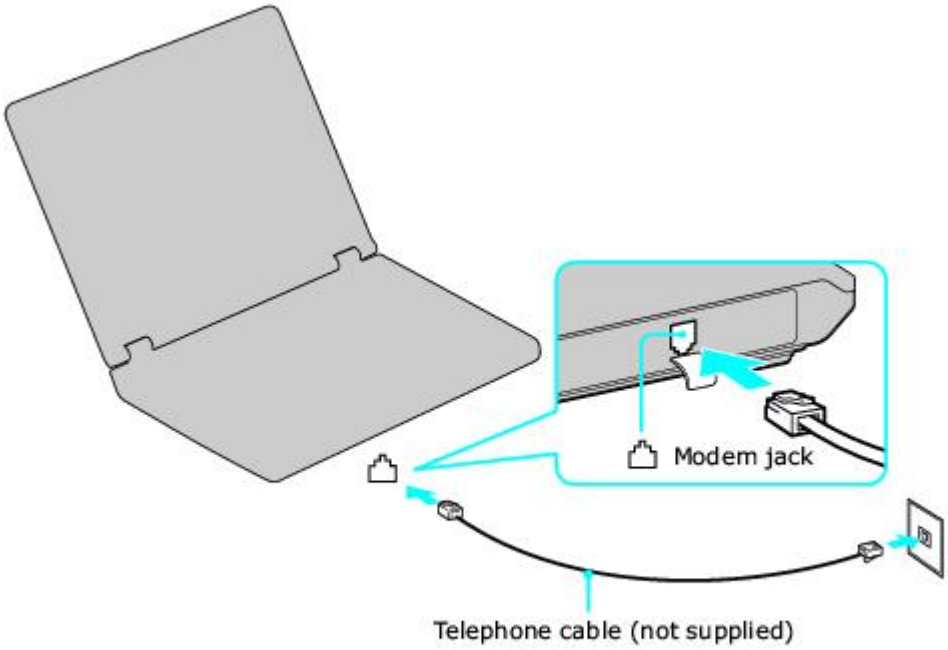
Setting up a dial-up Internet connection

Before you can connect to the Internet, you need to connect your computer to a telephone line via a telephone cable (not supplied). Once you set up your telephone cable, you're ready to connect to the Internet.

To connect a telephone cable

1. Locate the Modem jack on your computer. For location information, see Locating Controls and Ports.
2. Plug one end of the telephone cable into the Modem jack. Make sure it clicks into place.
3. Plug the other end into the wall jack.

Connecting a Telephone Cable



This illustration portrays a prototypical computer.
Actual port locations differ between computer models.

Your computer does not work with party lines, cannot be connected to a coin-operated telephone, and may not work with multiple telephone lines or a private branch exchange (PBX). Some of these connections may result in excess electrical current and could cause a malfunction in the internal modem.

If you connect a telephone cable coming through a splitter, the modem or connected device may not work properly.

To set up a dial-up connection to the Internet

1. Connect your computer to a telephone line. See To connect a telephone cable for more information.
2. Click **Start**, point to **All Programs**, **Accessories**, **Communications**, and click **New Connection Wizard**. The **New Connection Wizard** appears.

New Connection Wizard

New Connection Wizard
Welcome to the New Connection Wizard
This wizard helps you:
Connect to the Internet.
Connect to a private network, such as your workplace network.
Set up a home or small office network.
To continue, click Next.
< Back
Next >
Cancel

3. Click **Next**. If the **Location Information** dialog box appears, follow the on-screen instructions.

4. If it is not already selected, click to select **Connect to the Internet**, and click **Next**.

5. Follow the on-screen instructions.

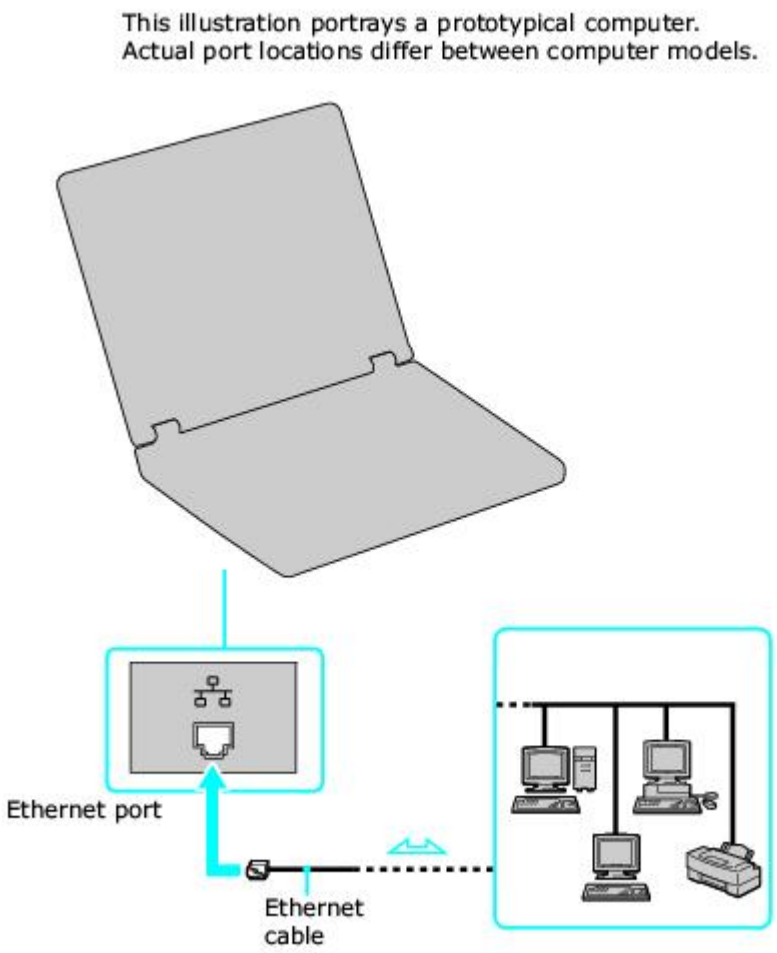
Setting up an Ethernet Internet connection

Your computer accommodates both 10BASE-T and 100BASE-TX Ethernet connections, with data transfer speeds of between 10 and 100 Mbps.

To connect an Ethernet cable

1. Locate the Ethernet port on your computer. For location information, see Locating Controls and Ports.

Connecting an Ethernet Cable


This illustration portrays a prototypical computer.
Actual port locations differ between computer models.
Ethernet port
Ethernet cable

2. Plug one end of the Ethernet cable into your computer's Ethernet port and the other into the network connection.

To set up an Ethernet connection to the Internet

1. Connect your computer to a network connection.

2. Click **Start**, point to **All Programs**, **Accessories**, **Communications**, and click **New Connection Wizard**. The **New Connection Wizard** appears.

New Connection Wizard

New Connection Wizard
Welcome to the New Connection Wizard
This wizard helps you:
Connect to the Internet.
Connect to a private network, such as your workplace network.
Set up a home or small office network.
To continue, click Next.
< Back
Next >
Cancel

3. Click **Next**. If the **Location Information** dialog box appears, follow the on-screen instructions.
4. If it is not already selected, click to select **Connect to the Internet**, and click **Next**.
5. Follow the on-screen instructions.

Customizing your Internet connection

The Internet Properties dialog box enables you to change the way you view the Internet. You can change your home page, fonts, language, and colors. You can also regulate content and set browsing preferences.

To open the Internet Properties dialog box

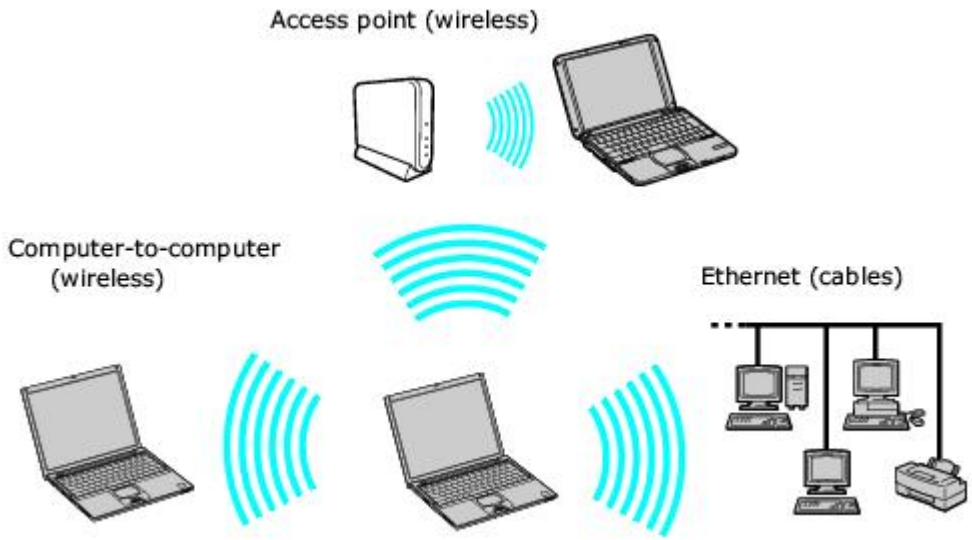
1. Click **Start** on the Windows® taskbar, and then **Control Panel**.
2. Click **Network and Internet Connections**, and then **Internet Options**. The **Internet Properties** dialog box appears.
3. Click the tabs to view options.
4. Make changes, and click **Apply** to activate your changes.
5. Click **OK**.

Network Connections

With a Sony computer, you can easily set up or connect to a variety of networks. The New Connection Wizard and Network Setup Wizard make it easy to gain access to networks (LANs) using wireless, Ethernet, or dial-up connections.

For more information about networking, click **Start**, **Help and Support**, and then **Networking and the Web**.

*Types of Networks**



* The computers represented in this illustration are for representative purposes only and may not be identical to the model you purchased.

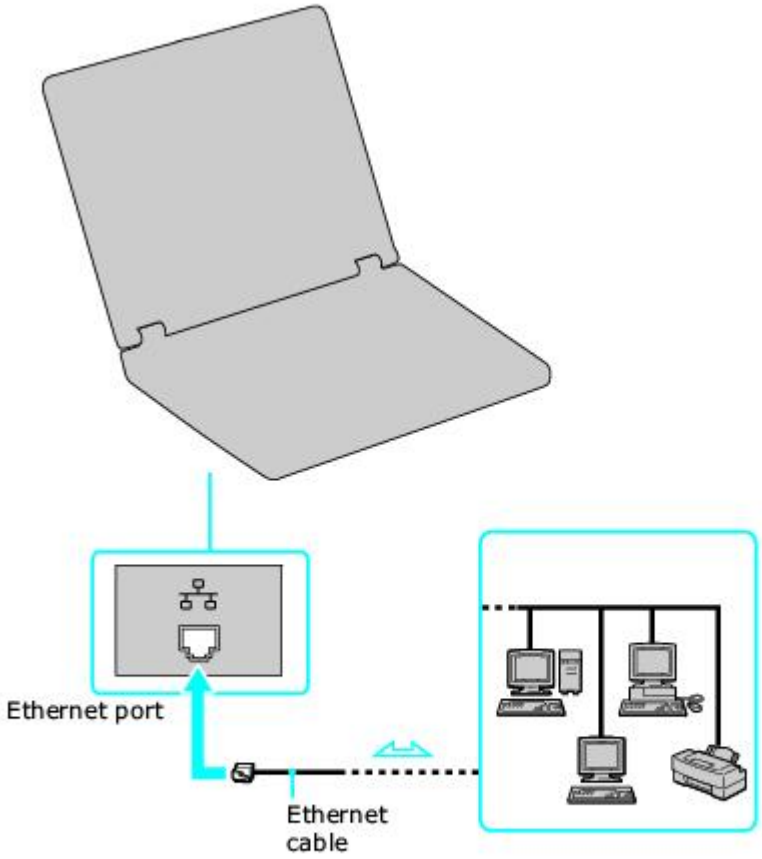
Using Ethernet and dial-up connections

For setting up local area networks (LANs), Ethernet is a widely installed technology. Your computer accommodates both 10BASE-T and 100BASE-TX Ethernet connections, with data transfer speeds of between 10 and 100 Mbps.

To connect to a local area network using a telephone or Ethernet cable

1. Connect an Ethernet or telephone cable to your computer. See To connect an Ethernet cable and Setting up a dial-up Internet connection for more information.

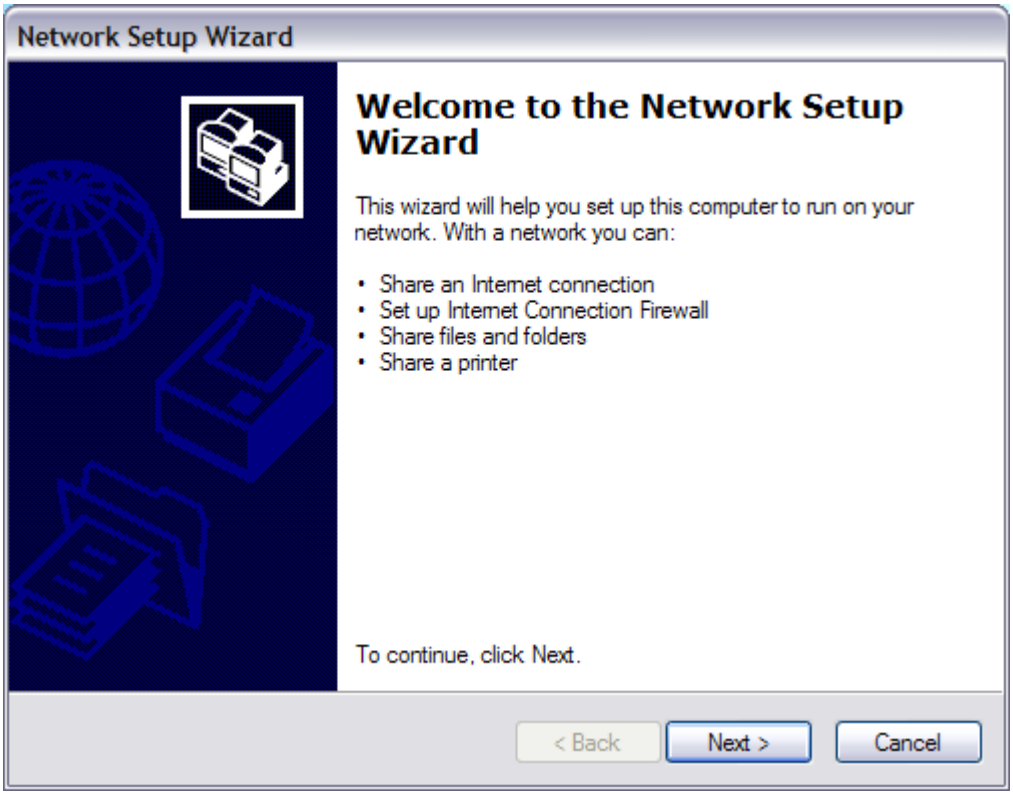
Connecting an Ethernet Cable



This illustration portrays a prototypical computer.
Actual port locations differ between computer models.

2. Click **Start**, point to **All Programs**, **Accessories**, **Communications**, and click **Network Setup Wizard**. The **Network Setup Wizard** appears.

Network Setup Wizard


Network Setup Wizard
Welcome to the Network Setup Wizard
This wizard will help you set up this computer to run on your network. With a network you can:
• Share an Internet connection
• Set up Internet Connection Firewall
• Share files and folders
• Share a printer
To continue, click Next.
< Back
Next >
Cancel

3. Click **Next**. If you are prompted to the **Local Information** dialog box, follow the on-screen instructions.

Only connect 10BASE-T and 100BASE-TX cables to the Ethernet port . Do not connect any other type of network cable or any telephone cable. Connecting cables other than those listed above may result in an electric current overload and could cause a malfunction, excessive heat, or fire in the port. To connect the unit to the network, see Using Ethernet and dial-up connections or contact your network administrator.

You can connect to an Ethernet network from a remote location and use data, programs, and network resources. See Microsoft® Windows® Help by clicking **Help and Support** from the **Start** menu, and then clicking **Networking and the Web** in the left panel.

To connect to a remote network using a telephone or Ethernet cable

1. Connect an Ethernet or telephone cable to your computer. See To connect an Ethernet cable and Setting up a dial-up Internet connection for more information.
2. From the **Start** menu, point to **All Programs**, **Accessories**, **Communications**, and click **New Connection Wizard**.
3. Click **Next**. If you are prompted to the **Local Information** dialog box, follow the on-screen instructions.
4. Click **Connect to the network at my workplace**, and then click **Next**.
5. Follow the on-screen instructions.
6. Ask your network administrator for the detailed settings and devices needed to connect to an existing network.

Using wireless network connections (selected models only)

A wireless local area network (LAN) is a network in which you can connect to a LAN through a wireless (radio) connection. You can opt to purchase a Sony Wireless LAN Access Point to set up a LAN.

The wireless LAN access point is designed for building a wireless LAN environment. Because a wireless LAN configuration requires no wiring, you can operate multiple computers more freely than ever before.

Your computer is equipped with a built-in mini PCI card that allows for wireless connections. For information about your computer's wireless capabilities, see the VAIO® Computer Specifications.

For more information on Sony Wireless LAN, go to http://www.sonystyle.com/vaio.

There are two types of wireless connections:

- An infrastructure network is one that extends an existing wired local network to wireless devices by providing an access point. The access point bridges the wireless and wired LAN and acts as a central controller for the wireless LAN. The access point coordinates transmission and reception from multiple wireless devices within a specific range. For more information, see To connect to a wireless network.
- A computer-to-computer (ad-hoc) network is one in which a local network is created only by the wireless devices themselves, with no other central controller or access point. Each device communicates directly with other devices in the network. You can set up an ad-hoc network easily at home. For more information, see To set up a computer-to-computer (ad-hoc) network.

To connect to a wireless network

1. Make sure an access point is set up. See the instructions that accompanied the access point for more information.
2. Move the Wireless switch to **ON** (for location information, see Locating Controls and Ports).

   If your computer comes with Bluetooth® technology,[1] follow steps 1 and 2 below; otherwise, continue with step 3.

   1. When **Wireless Device Switch** window appears, select the **Enable Wireless LAN** option, and then deselect the **Enable Bluetooth Device** option, if it is selected.

      You can also click the **Wireless LAN-ON** icon on the Taskbar Notification area to open the **Wireless Device Switch** window.
      The **Bluetooth-ON** icon may appear on the Taskbar Notification area if you have established a Bluetooth® connection**.** Clicking this icon also opens the **Wireless Device Switch** window.

Wireless Device Switch

   2. Click **OK**.
3. Select the **Enable Wireless LAN** option, and then deselect the **Enable Bluetooth Device** option, if it is selected.
4. Click **OK**.

5. Click **Start**, **Control Panel**, **Network and Internet Connections**, and then click **Network Connections**. The **Network Connections** window appears.

6. In the right panel under **LAN or High-Speed Internet**, right-click **Wireless Network Connection Enabled**, and select **View Available Wireless Networks**. The Wireless Network Connection window appears.

Wireless Network Connection

Wireless Network Connection
The following wireless network(s) are available. To access a wireless network, select it from the list, and then click Connect.
Available wireless networks:
ulfast
ae8005-G
net-b
This wireless network requires the use of a network key (WEP). To access this network, type the key, then click Connect.
Network key:
Confirm network key:
Enable IEEE 802.1x authentication for this network
If you are having difficulty connecting to a network, click Advanced.
Advanced...
Connect
Cancel

7. From the **Available wireless networks** list, select the name of the network in which you want to connect. If you do not see the network name, see If the network does not appear in the Available wireless networks list box.

8. If required, type the network key in the **Network key** box. (If necessary, ask the administrator for the key.)

9. Retype the network key in the **Confirm network key** box.

10. Click **Connect**.

If the network does not appear in the Available wireless networks list box

1. Click **Advanced** on the **Wireless Network Connection** dialog box. The **Wireless Network Connection Properties** dialog box appears.

Wireless Network Connection Properties

2. Click **Add** in the **Preferred networks** box. The **Wireless network properties** dialog box appears.

Wireless Network Properties

3. Type the name of the network (access point) you want to connect to in the **Network name (SSID)** box.

   The following steps are for networks that require a network key. If you do not know the network key or are not sure a network key is required, see the network administrator or the guide that accompanied your access point for more information.

4. If available, make sure the **Data encryption (WEP enabled)** check box is selected.
   If the **Data encryption (WEP enabled)** check box is not available:

   1. Select an authentication method from the **Network Authentication** menu.

   2. Select a data encryption method from the **Data Encryption** menu.

5. Click to cancel the **The key is provided for me automatically** check box.

6. Type the network key in the **Network key** box if it is required by the selected authentication method.

7. Retype the network key in the **Confirm network key** box.

8. Click **OK**. The network name appears in the **Preferred networks** list box.

To set up a computer-to-computer (ad-hoc) network

The computer-to-computer (ad-hoc) network is only supported by the IEEE 802.11b wireless standard.

1. Move the Wireless switch to **ON**. For location information, see Locating Controls and Ports.

2. Click **Start**, **Control Panel**, **Network and Internet Connections**, and then click **Network Connections**. The **Network Connections** window appears.

3. In the right panel under **LAN or High-Speed Internet**, right-click **Wireless Network Connection Enabled**, and select **View Available Wireless Networks**. The Wireless Network Connection window appears.

Wireless Network Connection

Wireless Network Connection
The following wireless network(s) are available. To access a wireless network, select it from the list, and then click Connect.
Available wireless networks:
uifast
ae8005-G
net-b
This wireless network requires the use of a network key (WEP). To access this network, type the key, then click Connect.
Network key:
Confirm network key:
Enable IEEE 802.1x authentication for this network
If you are having difficulty connecting to a network, click Advanced.
Advanced...
Connect
Cancel

4. Click **Advanced**. The **Wireless Network Connection Properties** dialog box appears.

Wireless Network Connection Properties

5. Click **Add**. The **Wireless network properties** dialog box appears.

Wireless Network Properties

6. Type the name of the network you want to connect to in the **Network name (SSID)** box.

7. If available, make sure the **Data encryption (WEP enabled)** check box is selected.
   If the **Data encryption (WEP enabled)** check box is not available:

   1. Select an authentication method from the **Network Authentication** menu.

   2. Select a data encryption method from the **Data Encryption** menu.

8. Click to cancel the **The key is provided for me automatically** check box.

9. Type a network key in the **Network key** box.

10. Retype the network key in the **Confirm network key** box.

11. Click to select **This is a computer-to-computer (ad hoc) network; wireless access points are not used**.

12. Click **OK**. The network name appears in the **Preferred networks** list box.

13. Click **Advanced**. The **Advanced** dialog box appears.

Advanced

14. Click to select **Computer-to-computer (ad hoc) networks only**, and then click **Close**.

To disconnect from a wireless network

- For computers with built-in wireless LAN functionality, move the Wireless switch to **OFF**.

Turning off the wireless LAN functionality while accessing remote documents, files, or resources may result in data loss.

To disconnect from a computer-to-computer (ad-hoc) network

1. Click **Start**, **Control Panel**, **Network and Internet Connections**, and then click **Network Connections**. The **Network Connections** window appears.

2. In the right panel under **LAN or High-Speed Internet**, click **Wireless Network Connection Enabled**. The **Wireless Network Connection Status** window appears.

3. Click **Properties**. The **Wireless Network Connection Properties** dialog box appears.

4. On the **Wireless Networks** tab, click **Advanced**. The **Advanced** dialog box appears.

5. Click to select **Any available network (access point preferred)**, and click **Close**.

6. Move the Wireless switch to **OFF**.

[1] Bluetooth technology is available on selected models only.

Checking your network connection status

Whether you have a wireless, Ethernet, or dial-up connection, you can check the status of that connection.

To check your network connection status

1. Click **Start** on the taskbar, and click **Control Panel**, **Network and Internet Connections**, and **Network Connections**. The **Network Connections** window appears.

2. Under **LAN or High-Speed Internet**, click the enabled network connection to open the connection status window.

Wireless Network Connection Status

Bluetooth Connections

Bluetooth® wireless technology provides short-range connectivity without the need for cabling. When the Bluetooth functionality is turned on, your computer can exchange data and images with other compatible Bluetooth devices within a range of up to 32 feet.

✍ With Bluetooth technology, your computer transmits a radio frequency of 2.4 GHz. Sensitive locations, such as hospitals and airplanes, may have restrictions on the use of Bluetooth devices, due to radio interference. Check with facility staff to verify that use of the Bluetooth feature on your computer is permitted.

Using Bluetooth technology

Using Bluetooth® technology, your computer can communicate with:

- Compatible devices with integrated Bluetooth functionality, such as computers, mobile telephones, personal digital assistants (PDAs), mice, and keyboards.
- Compatible devices with an installed Bluetooth adapter, such as computers, printers, mice, and keyboards.

✍ Some Bluetooth devices may not work with your computer, depending on the type of equipment, software version, and other factors. Before purchasing a Bluetooth device, check its operating environment requirements.

A computer with Bluetooth features can:

- Send files and images between compatible devices
- Exchange vCards (electronic business cards)
- Connect to the Internet using a dial-up connection
- Print files and images on a printer equipped with Bluetooth technology
- Exchange addresses with compatible cellular phones

Establishing wireless connections

The Wireless Device Switch window enables you to select a wireless connection: Bluetooth, Wireless LAN, or Bluetooth and Wireless LAN function.

Bluetooth® technology is designed for a short-range connection of up to 32 feet (10 meters), while Wireless LAN technology has a wider connection range of up to 328 feet (100 meters). Your computer is capable of both Bluetooth and Wireless LAN connections. For more information about Wireless LAN, see Using wireless network connections (selected models only).

To establish a Bluetooth connection

1. On your computer, move the WIRELESS switch to **ON**.

   The **Wireless Device Switch** window appears.

   You can also click the **Wireless LAN-ON** icon on the Taskbar Notification area to open the **Wireless Device Switch** window.

Wireless Device Switch

Wireless Device Switch
Wireless LAN
Enable 2.4 GHz Wireless LAN
Bluetooth Device
Enable Bluetooth Device
System Information
The frequency band of 2.4 GHz Wireless LAN and 5 GHz Wireless LAN are not compatible, please switch systems to same frequency in order to connect successfully.
Show this dialog when the wireless devices are activated
OK
Cancel
Apply
Help

2. Deselect the **Enable Wireless LAN** option, and then select the **Enable Bluetooth Device** option.
3. Click **OK**.

   During first use, the **Welcome to BlueSpace NE** window appears.

   The **Wireless LAN-ON** icon on the Taskbar Notification area switches to the **Bluetooth-ON** icon when a Bluetooth connection is enabled. To open the **Wireless Device Switch** window, click the **Bluetooth-ON** icon.

Welcome to BlueSpace NE

Welcome to BlueSpace NE
Using BlueSpace NE allows you to connect to other Bluetooth devices in range.
Recommendation:
Click [Connection Navigation] button to connect to the target device according to the on-screen instructions.
Connection Navigation
As you get accustomed to using BlueSpace NE:
You can even connect to devices from the main window. Click [OK] to display main window.
Don't display this dialog again
Don't launch BlueSpace NE automatically after logging on to Windows
OK
Cancel
Help

4. Click **OK**.

The **BlueSpace NE** window appears.

You can also click the **Bluetooth-Standing by** icon on the Taskbar Notification area to open the **BlueSpace NE** window.

BlueSpace NE

5. Click **Device Discovery**.

The **Device Discovery** window appears and searches for other nearby Bluetooth devices.

Device Discovery

When a device is detected, it appears in the **The device currently found** window next to the **New** icon New .

BlueSpace NE — Devices Currently Found

6. In **The device currently found** area, click to select the device to which you want to connect. (There may be more than one device displayed.)

7. If the device to which you want to connect has already been authenticated, the **Authentication** icon is displayed next to the device. Click **Service Discovery** for a list of available services, such as transferring files or images.

If the device to which you want to connect has not already been authenticated, a window prompt may ask if you want to authenticate the device. Follow the on-screen instructions. For more information, see Authenticating devices.

BlueSpace NE — Service Discovery List

Service Discovery list area
BlueSpace NE - 08:00:46:AC:00:77 [VALUED-C8773401]
File View Setting Device Help
The device currently found
Sort: Device status
Laptop
Service Discovery
File Push
Image Push
Serial
vCard
Connection Navigation
Device Discovery
Hint
STEP 3
Click the Service button to connect to the device selected in the device list or to set up the service at the Service tab in the Property dialog
Status: BlueSpace NE completed Service Discovery
BlueSpace NE

Authenticating devices

Authentication is a security feature, which prevents unauthorized communication between Bluetooth® devices. The first time Bluetooth devices attempt to communicate with each other, a common passkey must be entered before the two devices are allowed to exchange data. If the detected device has the same passkey as your computer, then authentication is successful, and your computer can communicate with the Bluetooth device. If the detected device does not have the same passkey as your computer, authentication fails.

A passkey is a private code entered by the user to enable two Bluetooth devices to communicate. When the same code is entered on both devices, communication becomes possible. The passkey may be changed at each communication session.
If a communication session is disconnected, you need to re-establish the passkey. Enter the passkey within approximately 30 seconds or authentication will fail.

To authenticate a Bluetooth device

1. If the **Confirmation for the authentication** window does not automatically appear, right-click the device you want to authenticate, and then click **Authentication** from the shortcut menu.

   The **Confirmation for the authentication** window appears.

Confirmation for the Authentication

Confirmation for the authentication - BlueSpace NE
Do you want to authenticate this device?
BlueSpace NE
Authentication is usually required for Bluetooth devices.
Are you sure you want to authenticate this device?
Device name:
Device Address:
Yes
No

2. Click **Yes**.

   The **Bluetooth Connection Wizard** appears.

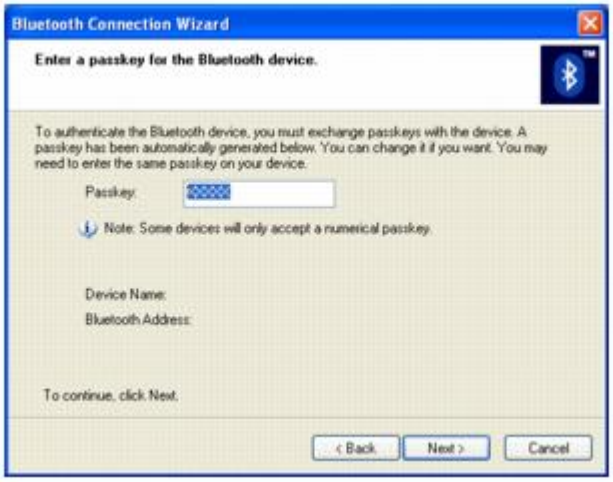
Bluetooth Connection Wizard

Bluetooth Connection Wizard
Welcome to the Bluetooth Connection Wizard
This wizard helps you authenticate your Bluetooth device. Your device may need to be prepared for authentication before this process will work. Windows uses authentication to verify that the detected device is the one you want to connect to.
You only have to authenticate the Bluetooth device once. For more information, read the manufacturer's documentation.
Learn more about Bluetooth
To continue, click Next.
< Back
Next >
Cancel

3. Click **Next**.

   Another **Bluetooth Connection Wizard** window appears.

Bluetooth Connection Wizard — Passkey


Bluetooth Connection Wizard
Enter a passkey for the Bluetooth device.
To authenticate the Bluetooth device, you must exchange passkeys with the device. A passkey has been automatically generated below. You can change it if you want. You may need to enter the same passkey on your device.
Passkey:
Note: Some devices will only accept a numerical passkey.
Device Name:
Bluetooth Address:
To continue, click Next.
< Back
Next >
Cancel

4. In the **Passkey** text box, type your own passkey or use the passkey that is provided. Click **Next**.

   On the Bluetooth device in which you are trying to connect, a message may appear, stating that a Bluetooth device requires authentication. If this message appears, follow the on-screen instructions.

5. On the Bluetooth device, type the same passkey as the one entered on your computer. If the passkey is not entered within approximately 30 seconds, authentication fails.

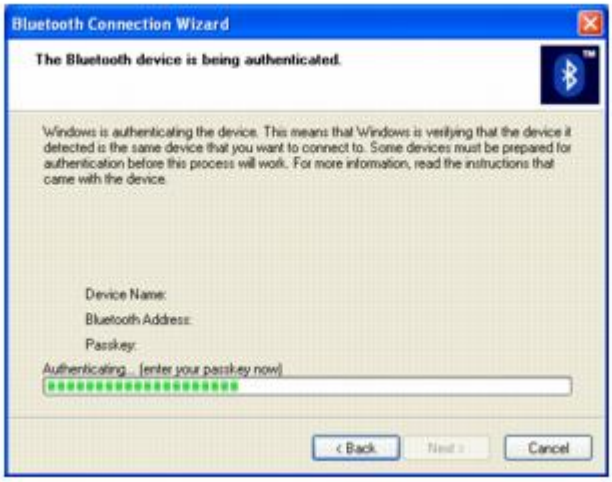
   If authentication fails, the **Bluetooth Connection Wizard** states, **The device was not authenticated**. Click **Finish**, and try the authentication procedure again.

   ✍ The passkey text box location may vary, depending on the Bluetooth device. For more information, see the documentation that accompanied the device.

6. Click **Next**.

   Your computer begins the authentication process.

Bluetooth Connection Wizard — Authentication Status


Bluetooth Connection Wizard
The Bluetooth device is being authenticated.
Windows is authenticating the device. This means that Windows is verifying that the device it detected is the same device that you want to connect to. Some devices must be prepared for authentication before this process will work. For more information, read the instructions that came with the device.
Device Name:
Bluetooth Address:
Passkey:
Authenticating... [enter your passkey now]
< Back
Cancel

You receive confirmation when the device is authenticated.

Bluetooth Connection Wizard — Authentication Completed

Bluetooth Connection Wizard
Completing the Bluetooth Connection Wizard
The device was successfully authenticated.
To close this wizard, click Finish.
< Back
Finish
Cancel

Renaming the Bluetooth USB Device

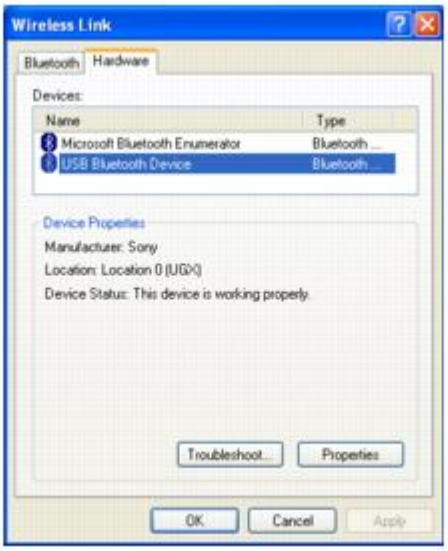
The Bluetooth® device installed on your computer has an assigned name that you may not recognize. Renaming this device makes it easy for you to identify your computer during authentication.

To rename the Bluetooth USB device

1. From the **Start** menu, click **Control Panel.**
2. Click **Printers and Other Hardware**, and then click **Wireless Link**.

   The **Wireless Link** window appears.
3. Click the **Hardware** tab.

Wireless Link



4. Select **USB Bluetooth Device**, and then click **Properties**.

   The **USB Bluetooth Device Properties** window appears.
5. Click the **Advanced** tab, and type a new name in the **Name** text box.

USB Bluetooth Device Properties

6. To see the new USB Bluetooth Device name, turn off the Bluetooth feature by moving the WIRELESS switch on your computer to **OFF**, and then restart it by moving the WIRELESS switch to **ON**.

Sending data and image files

When a connection is made between your computer and another Bluetooth® device, connection services become available. You can click Service Discovery for a list of available services that can be performed during your connection. If the File Push and Image Push icons appear, then your computer can send and receive data and image files.

For information about services, see Using connection services.

To send data files

1. Establish a connection with another Bluetooth device.

   For more information, see Establishing wireless connections.

2. On the **BlueSpace NE** window, click **Service Discovery**.

   The **File Push** icon appears in the **Service Discovery** area if the service is available.

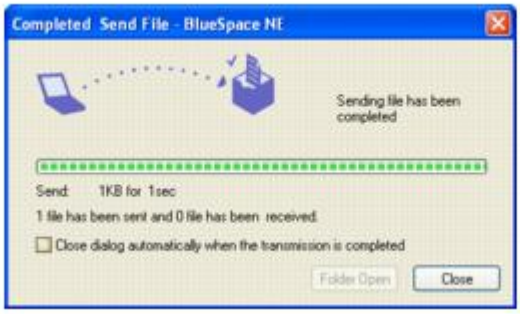
3. Click the **File Push** icon in the **Service Discovery** area.

   The **Select Files to Send** window appears.

4. Select the file you want to send, and click **Send**.

   The **Completed Send File** window appears when your file is received by the Bluetooth device to which your computer is connected.

Completed Send File — BlueSpace NE


Completed Send File - BlueSpace NE
Sending file has been completed
Send: 1KB for 1sec
1 file has been sent and 0 file has been received
Close dialog automatically when the transmission is completed
Folder Open
Close

To send image files

1. Establish a connection with another Bluetooth device.

   For more information, see Establishing wireless connections.

2. On the **BlueSpace NE** window, click **Service Discovery**.

   The **Image Push** icon appears in the **Service Discovery** area if the service is available.

3. Click the **Image Push** icon .

   The **Select Image Files to Send** window appears.

4. Select the file you want to send, and click **Send**.

   A confirmation window appears when the image file is successfully sent.

   When your computer receives an image, the file automatically opens.

Using connection services

When a connection is made between your computer and another Bluetooth® device, you can click Service Discovery for a list of available services that can be performed during your connection. When clicked, the purple Service Discovery icons search for a connection method.

For more information about the different services, see the BlueSpace NE help guide:

1. On the **BlueSpace NE** window, click **Help**.
2. Select **Search for topic**.

   The **Help for BlueSpace NE** window appears.

For information about the File Push and Image Push services, see Sending data and image files.

Setting Bluetooth preferences

The Bluetooth Options feature enables you to set hardware preferences for discovery, connection, and authentication.

To access Bluetooth Options

1. Click **Start**, **Control Panel**, **Printers and Other Hardware**, and **Wireless Link**.

   The **Wireless Link** window appears.

2. On the **Bluetooth** tab, click **Options**.

   The **Bluetooth Options** window appears.

Bluetooth Options

Bluetooth Options
Discovery
Selecting this check box allows Bluetooth devices to find this computer.
Allow Bluetooth devices to find this computer
Allow Incoming Connections
Select this check box to allow incoming connections from Bluetooth devices.
Allow incoming connections
Authentication Agent
Select this check box to allow Authentication Agent to notify you when a Bluetooth device needs authentication.
Enable Authentication Agent
Learn more about Bluetooth Connection Options
OK
Cancel

3. Set your desired preferences, and click **OK**.

✍ For more information about preferences, click the **Bluetooth Connection Options** link near the bottom of the window.

Setting BlueSpace NE preferences

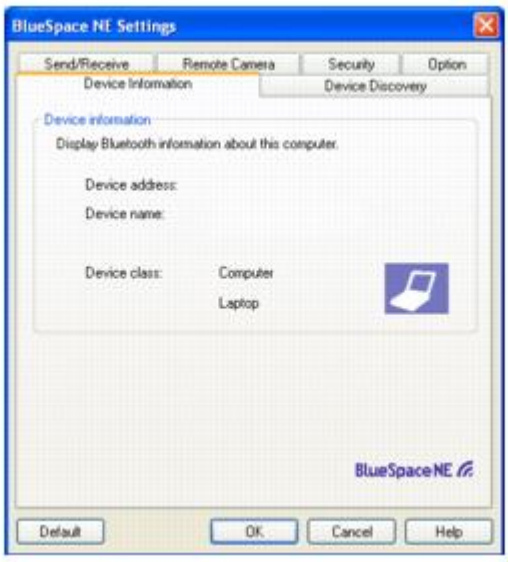
The BlueSpace NE Settings feature enables you to set software preferences for changing folder location, responding to device discovery, displaying windows, and more.

To set BlueSpace NE settings

1. Verify that your computer is not connected to another Bluetooth device.
2. From the **BlueSpace NE** window, click **Setting**, and then click **BlueSpace NE settings**.

   The **BlueSpace NE Settings** window appears.

BlueSpace NE Settings



3. Click each tab to navigate through the window and set your preferences.

For more information about settings, click **Help**.

Adding a Bluetooth device

Your computer can connect to several compatible Bluetooth® devices, such as printers, mobile telephones, modems for dial-up Internet connections, digital cameras, and personal digital assistants (PDAs). For specific device connection information, see the documentation that accompanied the device. You can also get connection information in the Bluetooth and BlueSpace NE help guides

To access the Bluetooth help guide

1. From the **Start** menu, click **Control Panel**.
2. Click **Printers and Other Hardware**, and then click **Wireless Link**.

   The **Wireless Link** window appears.
3. From the **Bluetooth** tab, click the **Bluetooth** link near the bottom of the window.

   The Bluetooth help guide appears.
4. Click **Installing and authenticating Bluetooth devices** for a list of devices.

To access the BlueSpace NE help guide

1. If the **BlueSpace NE** window is not already open, click the **Bluetooth - Standing by** icon on the Taskbar Notification area.
2. On the **Help** menu, click **Search for topics**.

   The **Help for BlueSpace NE** window appears.

Disconnecting a Bluetooth device

To disconnect or remove a device

1. If the **BlueSpace NE** window is not already open, click the **Bluetooth - Standing by** icon on the Taskbar Notification area.
2. In the **Devices currently found** window, select the device you want to disconnect or remove.
3. From the **BlueSpace NE** window, click **Device**.
4. From the **Device** menu, click either **Remove device**, **Remove all devices**, or select an option from the **Disconnect** submenu.

Additional information

- The data transfer rate varies, depending on the following conditions:
  - Obstacles, such as walls, located between devices
  - Distance between devices
  - Material used in walls
  - Proximity to microwaves and cordless telephones
  - Radio frequency interference and other environmental conditions
  - Device configuration
  - Type of software application
  - Type of operating system
  - Use of both Wireless LAN and Bluetooth functions at the same time on the computer
  - Size of file being exchanged
- The 2.4 GHz radio frequency used by Bluetooth® and wireless LAN devices is also used by other devices. Bluetooth devices incorporate technology that minimizes interference from other devices using the same wavelength, however, communication speed and connection range may be reduced. Interference from other devices may also stop communication altogether.
- Large files may occasionally become corrupted due to radio wave interference during continuous transfer.
- All Bluetooth devices must be certified to make sure that the applicable standard requirements are maintained. Even if standards are met, individual device performance, specifications, and operation procedures can vary. Data exchange may not be possible in all situations.

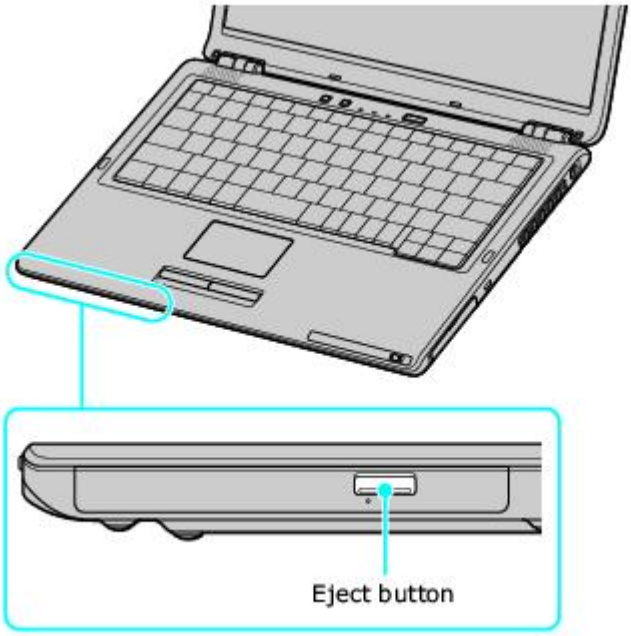
Inserting and Ejecting CDs or DVDs

Avoid using adhesive labels to identify your CDs or DVDs. Adhesive labels may damage the optical drive if they come off while the disc is in the drive.

To insert a disc

1. Turn on the computer or exit a power saving mode (Standby or Hibernate) if one is active. For more information, see Using power saving modes.
2. Press the Eject button on the optical drive cover to open the drive tray. The drive tray slides out.

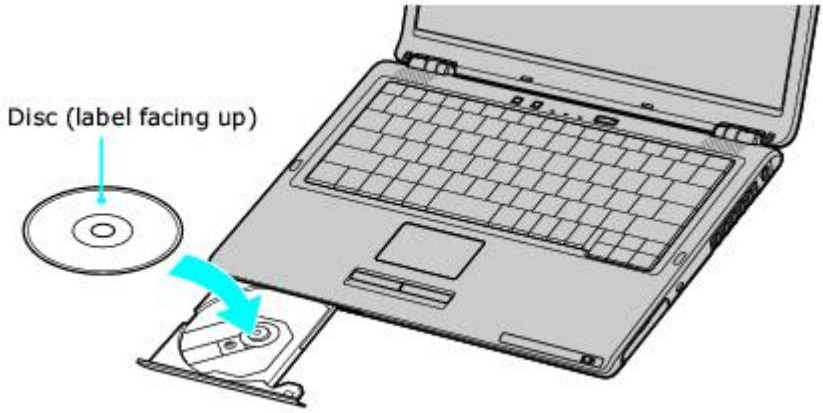
Ejecting the Drive Tray



3. Place a disc on the drive tray with the label facing up.

You can play some DVDs on both sides. Insert this type of DVD with the label you want to play facing up.

Inserting a Disc



4. Press the disc onto the tray until the disc clicks securely into place.

If you do not seat the disc firmly over the hub, the disc may come loose while it is in the drive. A loose disc may damage the optical drive and make opening the drive tray difficult.

5. Push the drive tray gently to close it. The Busy indicator on the drive cover blinks while your computer is reading data from the drive.

To eject a disc

1. Turn on the computer or exit a power saving mode (Standby or Hibernate) if one is active. For more information, see Using power saving modes.

2. Close all programs that access the optical drive, and wait for the Busy indicator on the drive cover to turn off.

3. Press the Eject button on the drive cover to open the drive tray. The drive tray slides out.

   If the Eject button does not work, turn off the computer and insert a thin, straight object (such as a paper clip) into the manual eject hole next to the Eject button.

4. Lift the disc from the drive.

5. Push the drive tray gently to close it.

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Avoid using adhesive labels to identify your CDs or DVDs. Adhesive labels may damage the optical drive if they come off while the disc is in the drive.

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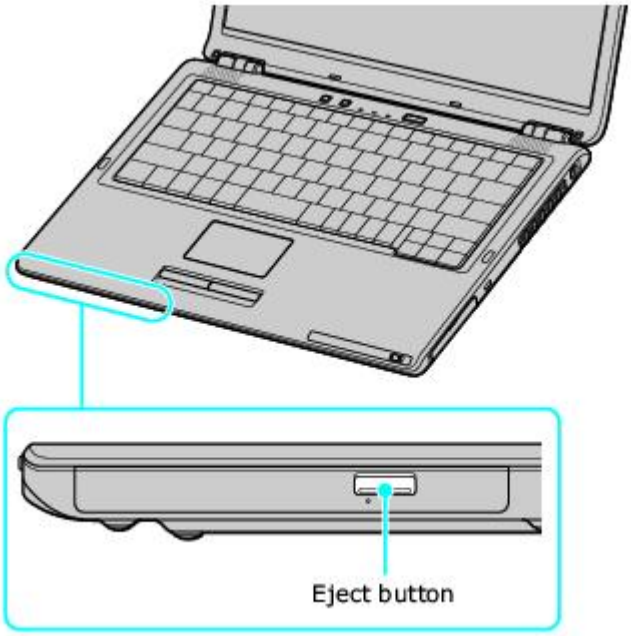
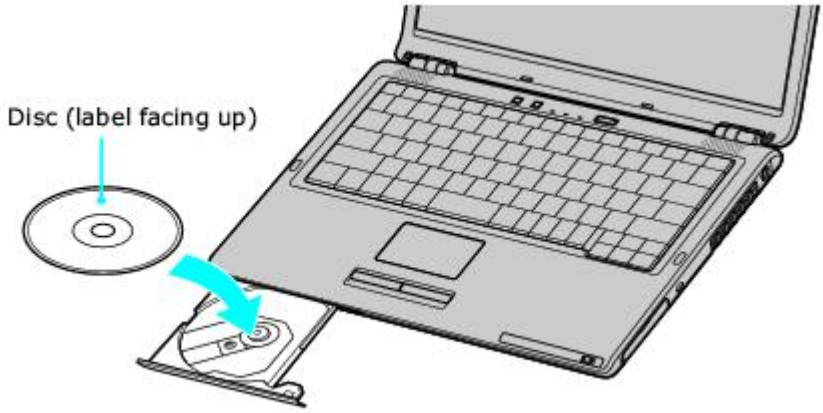
Ejecting the Drive Tray



3. Place a disc on the drive tray with the label facing up.

You can play some DVDs on both sides. Insert this type of DVD with the label you want to play facing up.

Inserting a Disc



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If you do not seat the disc firmly over the hub, the disc may come loose while it is in the drive. A loose disc may damage the optical drive and make opening the drive tray difficult.

5. Push the drive tray gently to close it. The Busy indicator on the drive cover blinks while your computer is reading data from the drive.

To eject a disc

1. Turn on the computer or exit a power saving mode (Standby or Hibernate) if one is active. For more information, see Using power saving modes.

2. Close all programs that access the optical drive, and wait for the Busy indicator on the drive cover to turn off.

3. Press the Eject button on the drive cover to open the drive tray. The drive tray slides out.

   If the Eject button does not work, turn off the computer and insert a thin, straight object (such as a paper clip) into the manual eject hole next to the Eject button.

4. Lift the disc from the drive.

5. Push the drive tray gently to close it.

Copying and Playing CDs and DVDs

Your computer plays and records CDs and DVDs, depending on the model you purchased. Check your specifications for the type of optical drive installed on your computer and use the table below to see which types of media your optical drive supports.

Optical Drive	Media (disc) Support
CD-ROM	Reads CD, CD-R, and CD-RW
CD-RW	Reads CD, CD-R, and CD-RW Writes to CD-R and CD-RW
CD-RW/DVD-ROM	Reads CD, CD-R, and CD-RW Writes to CD-R and CD-RW Reads DVD and most DVD-R and DVD-RW
DVD-RW	Reads CD, CD-R, and CD-RW Writes to CD-R and CD-RW Reads DVD, DVD-R, and DVD-RW; DVD+R and DVD+RW (in most cases) Writes to DVD-R and DVD-RW
DVD±RW	Reads CD, CD-R, and CD-RW Writes to CD-R and CD-RW Reads DVD, DVD-R, DVD-RW, DVD+R and DVD+RW Writes to DVD-R, DVD-RW, DVD+R, and DVD+RW

If you plan to use an external optical drive, connect the drive before you launch any preinstalled CD/DVD program.

Playing CDs

Before you play an audio CD, you may need to enable your computer's audio feature.

To enable the audio feature

1. Click **Start** on the Windows® taskbar, and then click **Control Panel**, **Performance and Maintenance**, and **System**. The **System Properties** dialog box appears.

   As a shortcut, you can press **Fn** + the **Windows** key + **Insert** to open the **System Properties** dialog box.

2. Select the **Hardware** tab, and in the **Device Manager** box, click **Device Manager**. A window with a listing of the computer's hardware devices appears.
3. Double-click the type of the optical drive installed on the computer, such as DVD/CD-ROM drives[1], to open the submenu.
4. Double-click the listed optical drive, and select the **Properties** tab.
5. Click to select the **Enable digital CD audio for this CD-ROM device** check box if it is not already selected.
6. Click **OK**.

To adjust the volume for playing CDs and DVDs

Some programs have built-in volume controls, which you can adjust. If there are no volume controls, then adjust the volume of your computer's built-in speakers by doing one of the following:

- Using the Function keys. An on-screen display may appear, notifying you when a change occurs.
  - To increase volume, press the **Fn** and **F4** keys.
  - To decrease volume, press the **Fn** and **F3** keys.
- Using the Volume icon.
  - Double click the **Volume** icon on the **Taskbar Notification** area. The **Volume Control** dialog box appears.
  - In the **Volume Control** and **Wave** columns, move the **Volume** sliders up to increase volume and down to decrease volume.

To play an audio CD

1. Insert the disc into the optical drive. See To insert a disc.
2. If nothing appears on the desktop once you insert an audio CD disc, then click **Start**, point to **All Programs**, and click to open a CD program, such as SonicStage.
   If the **Audio CD** window appears, click to select an option.

Audio CD

Audio CD (E:)
Windows can perform the same action each time you insert a disk or connect a device with this kind of file:
Music CD
What do you want Windows to do?
Play Audio CD using Windows Media Player
Play Audio CD using SonicStage
Play Audio CD using RealOne Player
Open folder to view files using Windows Explorer
Always do the selected action.
OK
Cancel

[1] Optical drive types vary, depending on the model you purchased.

Copying files to a CD-RW or CD-R

You can copy files to CD-R or CD-RW discs if your VAIO® computer is equipped with a CD-RW/DVD drive or DVD-RW drive. Before you write data to a CD-RW or CD-R disc, read the following notes to avoid a computer malfunction and ensure the best writing results:

- Deactivate the screen saver and exit anti-virus software.
- Deactivate memory-resident disc utilities to avoid data loss.
- Disable the FindFast program if it is installed on your computer. Click **Start** and point to **All Programs** to see a list of programs on your computer.
- Connect and use the AC adapter to power your computer or make sure your battery is at least 50 percent charged. See Powering Your Computer for more information.

To copy files to a CD-RW or CD-R

1. Insert a blank CD-R or CD-RWdisc into the optical drive. For more information, see Inserting and Ejecting CDs or DVDs.
   If the **CD Drive** window appears, click **Take no action** and click OK.

CD Drive

CD Drive (F:)
Windows can perform the same action each time you insert a disk or connect a device with this kind of file:
Blank CD
What do you want Windows to do?
Open writable CD folder using Windows Explorer
Take no action
Always do the selected action.
OK
Cancel

2. Open the **My Computer** window by pressing the **Windows** key and the **E** key simultaneously.
3. In the **Folders** panel on the left, locate the folder(s) from which you want to copy.
4. Right-click the file(s) or folder(s), point to **Send To**, and click the optical drive[1] name.
   A taskbar pop-up message appears, stating your files are waiting to be written to a CD.
5. Click on the pop-up message.
   The **CD Drive** window appears with the file(s) or folder(s) you want to copy listed under **Files Ready to Be Written to the CD**.
6. In the **CD Writing Tasks** box, click **Write these files to CD**.
   The **CD Writing Wizard** appears.
7. Follow the instructions on the **CD Writing Wizard**.

CD Writing Wizard

CD Writing Wizard
Welcome to the CD Writing Wizard
This wizard helps you write, or record, your files to a CD recording drive.
Type the name you want to give to this CD, or just click Next to use the name below.
CD name:
New files being written to the CD will replace any files already on the CD if they have the same name.
Close the wizard after the files have been written
< Back
Next >
Cancel

Do not strike or move the computer while writing data to a disc.

[1] The read/write drive letter designation may vary, depending on your system's hardware configuration.

Playing DVDs

You can play DVDs in your computer's optical drive and view the video on a multimedia display.

To play a DVD

1. Close all open programs.
2. Insert the DVD into the optical drive.
3. Open a preinstalled DVD program, such as InterVideo WinDVD®, by following these steps:
    1. Click **Start** on the taskbar, and point to **All Programs**.
    2. Select a program, such as InterVideo WinDVD®, to play the DVD. For instructions on how to use a program, see the help guide included with the DVD program.

Some discs recorded at 20 or 24 bits may produce noise while playing. If you have audio devices connected, this may damage your hearing and the speakers. Reduce the volume before playing a DVD.

Do not switch power saving modes while the computer is playing a DVD.

Do not use memory-resident utility software to speed up disc access when playing a DVD. This may cause the computer to malfunction.

Writing files to DVDs (on selected models only)

Use the table shown on Copying and Playing CDs and DVDs to see which type of DVD media your computer supports.

You can copy data or video files to DVD-R or DVD-RW discs if your VAIO® computer is equipped with a DVD-RW drive. Before you write data to a DVD-RW or DVD-R disc, read the following notes to avoid a computer malfunction and ensure the best writing results:

- Deactivate the screen saver and exit anti-virus software.
- Deactivate memory-resident disc utilities to avoid data loss.

To write files to DVD media

1. Connect the AC adapter to the computer. See Connecting the AC adapter for more information.
2. Insert a blank DVD-R or DVD-RW disc into the optical drive. See Inserting and Ejecting CDs or DVDs for more information.
3. Click **Start**, **All Programs**, and select the DVD software program you want to use from the submenu. Your computer may come with preinstalled Click to DVD software. See the Help guide supplied with the software for more information.

Do not strike or shake the computer while copying files to a disc.

Printing With Your Computer

Your computer is compatible with many popular printers. However, to ensure the best performance, printers must be compatible with the Microsoft® Windows® operating system installed on your computer.

Printing With Your Computer

Your computer is compatible with many popular printers. However, to ensure the best performance, printers must be compatible with the Microsoft® Windows® operating system installed on your computer.

Connecting a printer

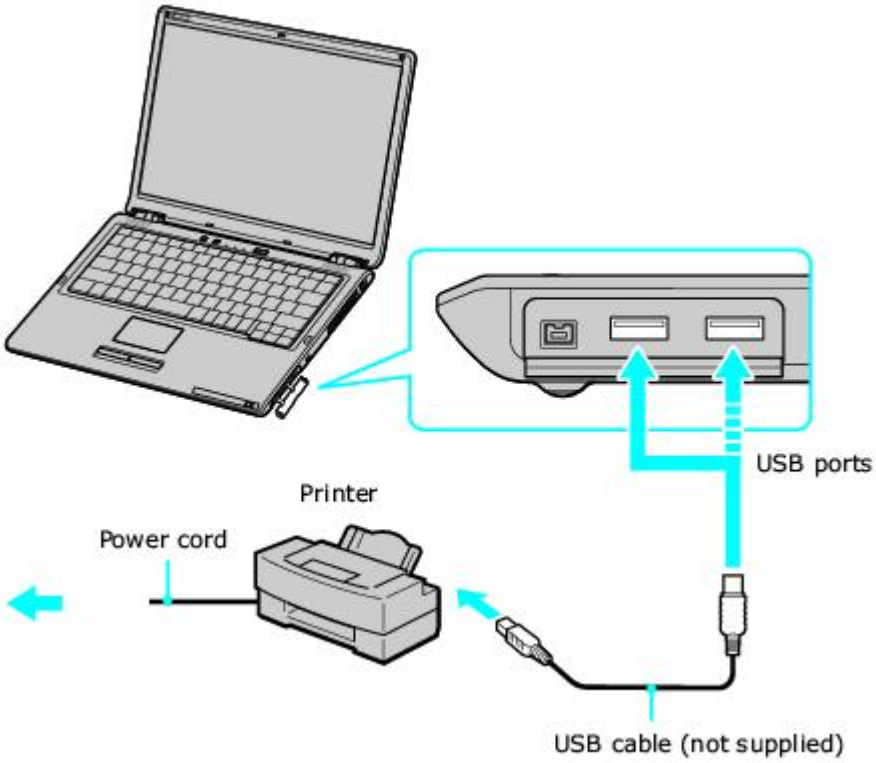
You can easily connect a printer to your computer or port replicator (if applicable). The New Hardware Wizard enables you to easily install the printer software, but some printers require separate driver software installation. See the instructions that accompanied your printer for more information.

If you are using the port replicator, connect the AC adapter to the port replicator. The port replicator must be powered by the AC adapter to function properly.

To connect a USB printer

1. Plug the USB cable into the USB port on your computer. See Locating Controls and Ports.
2. Plug the other end of the USB cable into the USB port on the printer.
3. Turn the printer on. The **Found New Hardware Wizard** appears on the computer screen.

Connecting a USB Printer

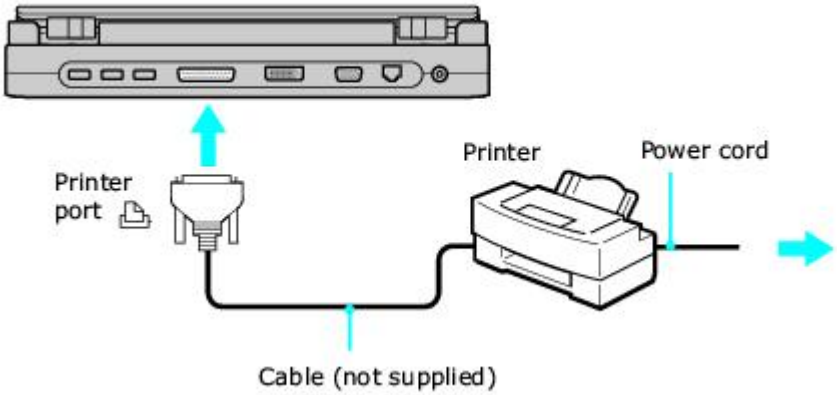


See the guide that accompanied the printer for more information on its installation and use.

To connect a printer (port replicators only)

1. Connect the port replicator to the computer. See Connecting the Port Replicator for instructions.
2. Plug the printer cable into the Printer port on your port replicator. See Locating Controls and Ports.
3. Plug the other end of the printer cable into the port on the printer, and turn the printer on.

Connecting a Printer



4. Restart your computer by clicking **Start**, **Turn Off Computer**, and **Restart**. If the **New Hardware Wizard** appears, follow the on-screen instructions.

5. Make sure the computer recognizes the printer. Follow these steps:

   - Click **Start**, **Control Panel**, **Printers and Other Hardware**, and then **Printers and Faxes**.
     If the computer recognizes the printer, it will be listed in the **Printers and Other Hardware** window.
     If the computer does not recognize the printer, you may need to install the printer driver software. See the guide that accompanied the printer for more information.

✍ See the guide that accompanied the printer for more information on its installation and use.

Disconnecting a printer

You can disconnect the printer cable when the computer is on or off. Disconnecting a printer when the computer is in a power saving mode (Standby or Hibernate) may cause the computer to malfunction.

To disconnect a printer

1. Make sure all printing jobs are completed.

2. Turn off the printer, then unplug the printer cable from the computer.

Using a Floppy Disk Drive

You can connect an external floppy disk drive (not supplied) to your computer. The floppy disk drive enables you to read or write data to a floppy disk.

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You can connect an external floppy disk drive (not supplied) to your computer. The floppy disk drive enables you to read or write data to a floppy disk.

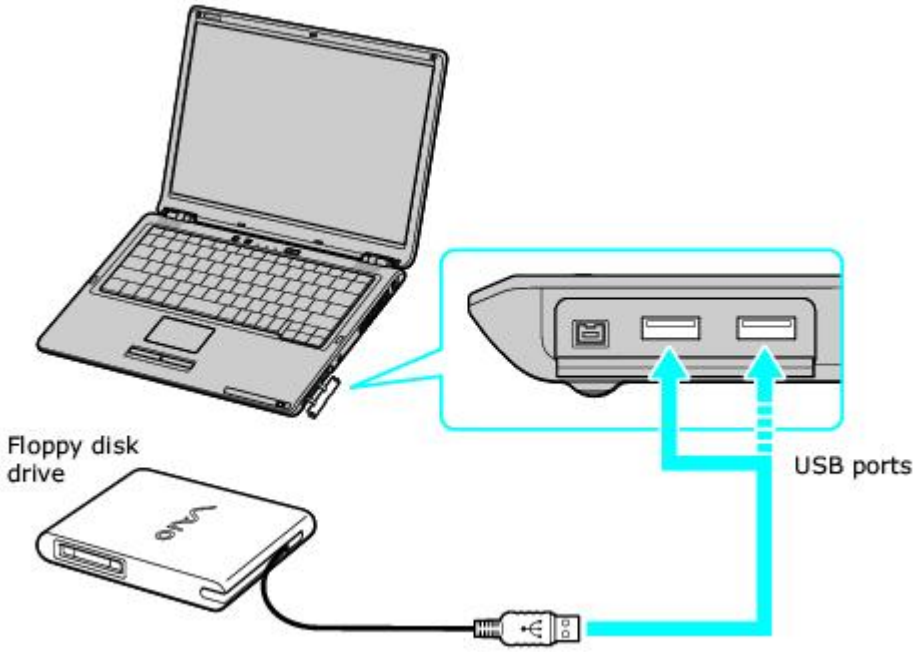
Connecting a floppy disk drive

You can connect a floppy disk drive when your computer is on or off. Connecting the drive when the computer is in a power saving mode (Standby or Hibernate) may cause the computer to malfunction.

To connect a USB floppy disk drive

1. Close any active programs to prevent data loss.
2. Plug the USB cable (with the USB icon facing upward) into the USB port . The **Found New Hardware** pop-up message appears.

Connecting a Floppy Disk Drive



Inserting and removing floppy disks

To write data to a disk, use one that is not write-protected or disable the write-protect feature. The floppy disk drive cannot write data to a disk if it is inserted into the drive improperly.

To insert a floppy disk

1. Hold the floppy disk with the label facing up.
2. Push the floppy disk into the drive until it clicks into place.

Inserting a Floppy Disk

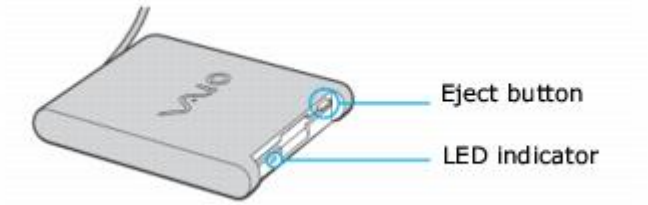
Do not open the shutter manually and touch the surface of the floppy disk.

To remove a floppy disk

1. Close all programs that access the floppy disk.
2. Wait for the LED indicator on the floppy disk drive to turn off.
3. Push the Eject button, and remove the disk.

To avoid losing data, do not push the Eject button when the LED indicator is on.

Removing a Floppy Disk



Protecting floppy disks

- Do not open the shutter manually or touch the surface of the floppy disk.
- Keep floppy disks away from magnets, direct sunlight, and heat sources.

Disconnecting a floppy disk drive

You can disconnect a USB floppy drive when the computer is off by disconnecting the USB cable from the computer. Disconnecting the drive when the computer is in a power saving mode (Standby or Hibernate) may cause the computer to malfunction.

To disconnect a USB floppy drive while the computer is on

1. Double-click the **Safely Remove Hardware** icon on the taskbar. The **Safely Remove Hardware** dialog box appears.
2. Click to select the floppy drive in the **Hardware devices** window, if it is not already selected.
3. Click **Stop**. The **Stop a Hardware device** window appears.
4. Make sure the floppy drive is selected, and click **OK.** A message appears stating it is safe to remove the hardware device.

Storing a floppy disk drive

Fold the floppy disk drive cable and connector into the side compartment on the floppy disk drive.

Storing a Floppy Disk Drive

Using PC Cards

Your computer includes one PC Card slot. A PC Card enables you to connect devices such as an optical drive or floppy disk drive.

See your VAIO® Computer Specifications for the type of PC Card that is compatible with your computer. The slot is compatible with CardBus. You do not need to turn off your computer to insert or remove a PC Card.

Using PC Cards

Your computer includes one PC Card slot. A PC Card enables you to connect devices such as an optical drive or floppy disk drive.

See your VAIO® Computer Specifications for the type of PC Card that is compatible with your computer. The slot is compatible with CardBus. You do not need to turn off your computer to insert or remove a PC Card.

Inserting PC Cards

To insert a PC Card

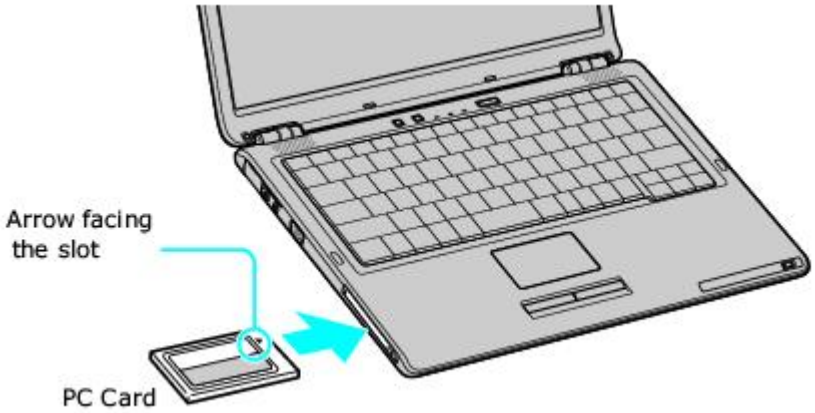
1. Make sure the front label of the PC Card is facing up.
2. Push the PC Card gently into the slot. The system automatically detects the PC Card.

Do not force a PC Card into the slot; this may damage the connector pins.

When a PC Card is inserted, do not place your computer in a bag or case. Pressure or shock to a PC Card may damage your computer.

Touching the head of the PC Card will not damage the connector pins, but damage may occur if the head of the PC Card is sticking out of the PC Card slot while the computer is being transported.

Inserting a PC Card



Removing PC Cards

You can remove PC Cards while the computer is on or off. PC Cards draw power from the computer when they are inserted into the PC Card slot, whether or not you use the card.

If you are not using your PC Card and you are using a battery as a power source, remove the PC Card from the PC Card slot to conserve battery power.

To remove a PC Card while your computer is on

1. Double-click the **Safely Remove Hardware** icon on the taskbar. The **Safely Remove Hardware** dialog box appears.
2. Click to select the PC Card in the **Hardware devices** window, if it is not already selected.
3. Click **Stop**. The **Stop a Hardware device** window appears.
4. Make sure the PC Card is selected, and click **OK.** A message appears stating it is safe to remove the hardware device.
5. Push the PC Card eject button (for location information, see Locating Controls and Ports). The eject button pops out.
6. Push the eject button a second time. The PC Card pops out.
7. Gently pull the card out of the slot.

To remove a PC Card while the computer is off

1. Push the Release button once. The Release button pops out.
2. Push the Release button a second time. The PC Card pops out.
3. Gently pull the card out of the slot.

Connecting and disconnecting PC Card drives

The PC Card drive enables you to read data stored on a DVD or CD. Your computer may come with an external PC Card drive, depending on the model you purchased. If you wish to purchase a PC Card drive, shop Sony online at http://www.sonystyle.com/vaio or contact your local retailer.

If you connect a non-Sony DVD drive to your VAIO® computer, DVD playback may not function properly. The supplied DVD software must be installed to play a DVD. For best performance, use a Sony compatible DVD drive.

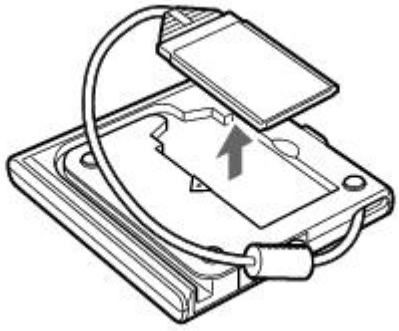
To connect a PC Card drive

You can connect a PC Card drive while the computer is on or off. Connecting the drive when the computer is in a power saving mode (Standby or Hibernate) may cause the computer to malfunction.

Instructions on connecting an optical drive may vary, depending on the specific drive you purchased.

1. Remove the PC Card from the bottom of the optical drive.

Removing a PC Card



2. Insert the PC Card into the PC Card slot with the arrow facing the slot. See To insert a PC Card for more information.

Remove the protective cover that is attached to the lens of the optical drive before you use the drive. See Inserting and Ejecting CDs or DVDs for information on how to open the optical drive to access the lens.

See the guide that accompanied your optical drive for more information on its installation and use.

To disconnect a PC Card drive

1. Close all programs accessing the PC Card drive.
2. Double-click the **Safely Remove Hardware** icon on the taskbar. The **Safely Remove Hardware** window appears.
3. Select the PC Card drive in the **Hardware devices** window, if it is not already selected.
4. Click **Stop**. The **Stop a Hardware device** window appears.
5. Make sure the PC Card drive is selected, and click **OK**. A message appears stating it is now safe to remove the hardware device.
6. Eject the PC Card from the PC Card slot.

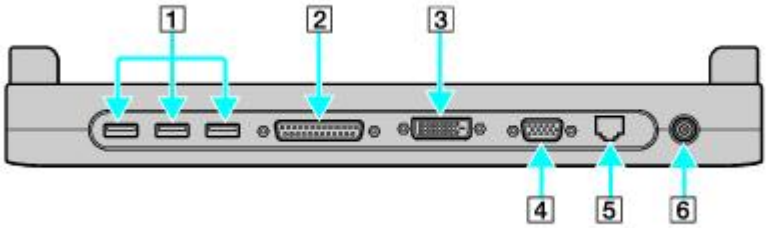
Port Replicator Connections

A port replicator is a device that attaches to your computer and contains additional ports. One may come with your computer, depending on the model you purchased. If you wish to purchase a port replicator, shop Sony online at http://www.sonystyle.com/vaio or contact your local retailer.

When your computer is connected to a port replicator, use only the Ethernet port on the port replicator, not the Ethernet port on the computer. Also, the port replicator must be power by the AC adapter to function properly.

The printer port on this port replicator is intended for printer connections only.

Port Replicator (Back Panel)



1 USB ports **4** Monitor (VGA) port

2 Printer port **5** Network (Ethernet) port (10BASE-T/100BASE-TX)

3 DVI-D port **6** DC IN port

Connecting the Port Replicator

When using the port replicator, always use the AC adapter to power the port replicator; otherwise, the port replicator will be without power and will not function properly. Also, take precautions to avoid disconnecting the AC power supply when moving the computer with the port replicator attached.

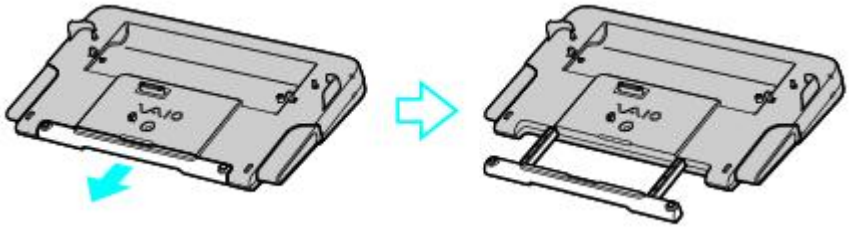
Before you connect the port replicator, you may want to install the rechargeable battery, if it is not already installed. The installed battery automatically charges while the computer and port replicator are powered by the AC adapter.

Connecting a port replicator while the computer is in a power saving mode (Standby or Hibernate) may result in data loss or a computer malfunction.

To connect a port replicator

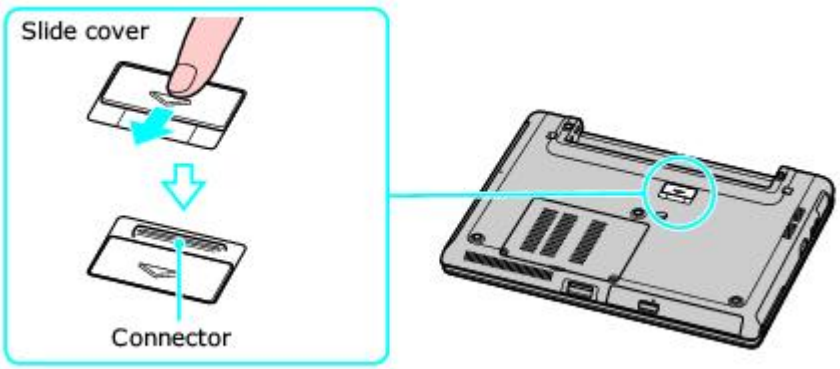
1. Close active programs to prevent data loss.
2. Turn off the computer, and disconnect all attached devices.
3. Place the port replicator on a stable surface, and pull out the extendable support arm, which is located on the front edge of the port replicator.

Pulling Out the Extendable Support Arm



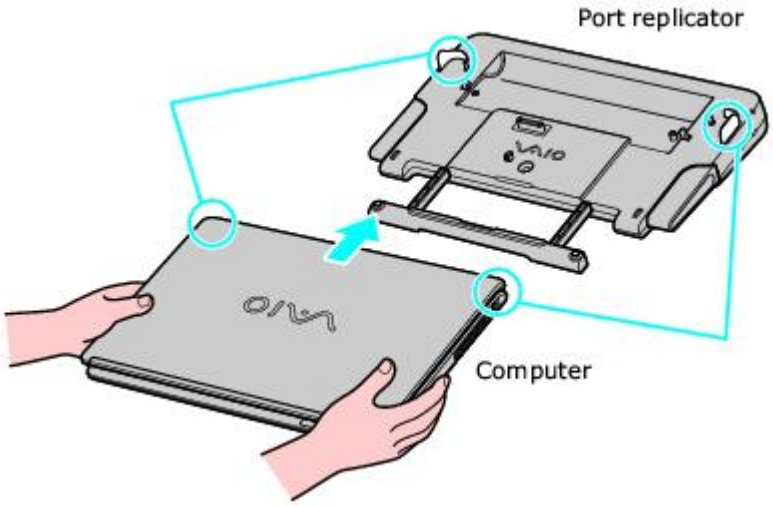
4. On the bottom of the computer, slide the port replicator cover down until the port replicator connector is completely visible.

Sliding the Port Replicator Cover



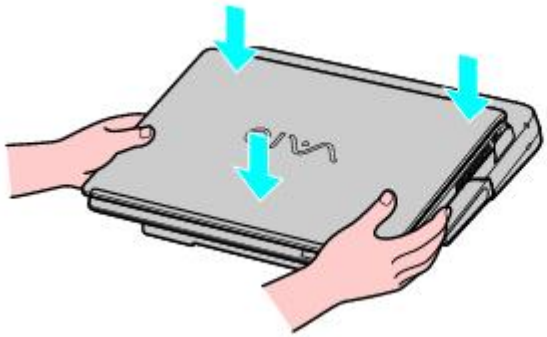
5. Slip the back edges of the computer into the raised edges on the port replicator.

Connecting the Port Replicator



6. Gently push the computer onto the port replicator until it clicks into place. Make sure the port replicator is securely fastened to the computer.

Securing the Port Replicator



7. Plug the AC adapter into the DC IN port on the port replicator, and plug the power cord into the AC adapter and an AC outlet. The power indicator on the port replicator turns on.
8. Press the Power button to turn on the computer.

Connecting a Flat-Panel Display

The port replicator includes Digital Visual Interface (DVI) and Monitor (VGA) ports to which you can connect your computer to a flat-panel display. You must have a DVI-D or DVI-D/I display cable to use the DVI port or a display cable to use the Monitor port. If you wish to purchase a cable, contact your local retailer.

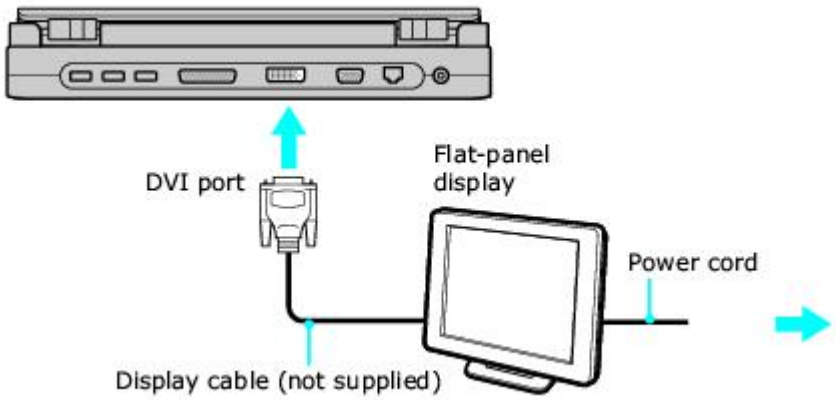
For more information about Monitor port connections, see Using Computer Monitors and Projectors.

To connect the computer to a flat-panel display using the DVI port

1. Connect the computer to the port replicator. See Connecting the Port Replicator for more information.
2. Plug the power cord for the flat-panel display into an AC outlet.
3. Plug the display cable into the DVI port on the port replicator.
4. Turn on the computer and flat-panel display.
5. Press the **Fn**+**F7** keys to toggle the display between your computer, the flat-panel display, or both the computer and flat-panel display. See Selecting a display for more information.

You cannot use the Monitor (VGA) port on your computer when a port replicator is connected to the computer. Use the DVI or Monitor (VGA) port on the port replicator instead.

Connecting a Flat-Panel Display



Disconnecting a Port Replicator

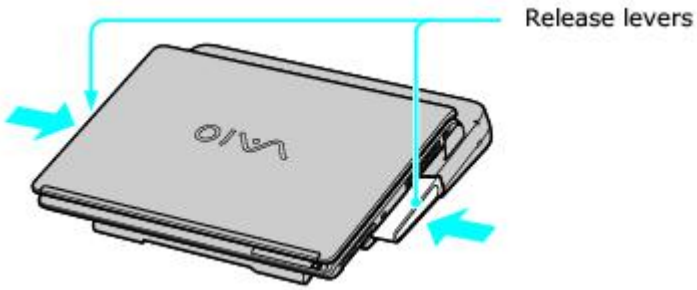
Disconnecting a port replicator when the computer is in a power saving mode (Standby or Hibernate) or the battery power is low may result in data loss or a computer malfunction. You can disconnect a port replicator when the computer is on or off.

When the battery is low, turn off the computer before you disconnect a port replicator.

To disconnect a port replicator

1. Close any active programs to prevent data loss, and disconnect the AC adapter.
2. Push the release levers on each side of the port replicator to release the computer from the port replicator.

Releasing a Computer from a Port Replicator



3. Lift the computer away from the port replicator.

Disconnecting a Port Replicator

Using i.LINK Digital Video Recorders

You can connect a digital video (DV) recorder, such as a Sony digital video recorder, to the i.LINK®[1] S400 (IEEE 1394) port on your computer. The i.LINK digital video camera recorder is an external device that enables you to record and view digital images on your computer via the i.LINK port.

[1] i.LINK is a trademark of Sony used to designate that a product contains an IEEE 1394 connector. The i.LINK connection may vary, depending on the software application, operating system, and compatible i.LINK devices. All products with an i.LINK connection may not communicate with each other. Refer to the documentation that came with your compatible i.LINK device for more information on operating conditions and proper connection. Before connecting compatible i.LINK PC peripherals to your system, such as a CD-RW or hard disk drive, confirm their operating system compatibility and required operating conditions.

Using i.LINK Digital Video Recorders

You can connect a digital video (DV) recorder, such as a Sony digital video recorder, to the i.LINK®[1] S400 (IEEE 1394) port on your computer. The i.LINK digital video camera recorder is an external device that enables you to record and view digital images on your computer via the i.LINK port.

[1] i.LINK is a trademark of Sony used to designate that a product contains an IEEE 1394 connector. The i.LINK connection may vary, depending on the software application, operating system, and compatible i.LINK devices. All products with an i.LINK connection may not communicate with each other. Refer to the documentation that came with your compatible i.LINK device for more information on operating conditions and proper connection. Before connecting compatible i.LINK PC peripherals to your system, such as a CD-RW or hard disk drive, confirm their operating system compatibility and required operating conditions.

Connecting an i.LINK digital video recorder

You can connect an i.LINK digital video (DV) recorder when the computer is on or off. Connecting the DV recorder when the computer is in a power saving mode (Standby or Hibernate) may cause the computer to malfunction.

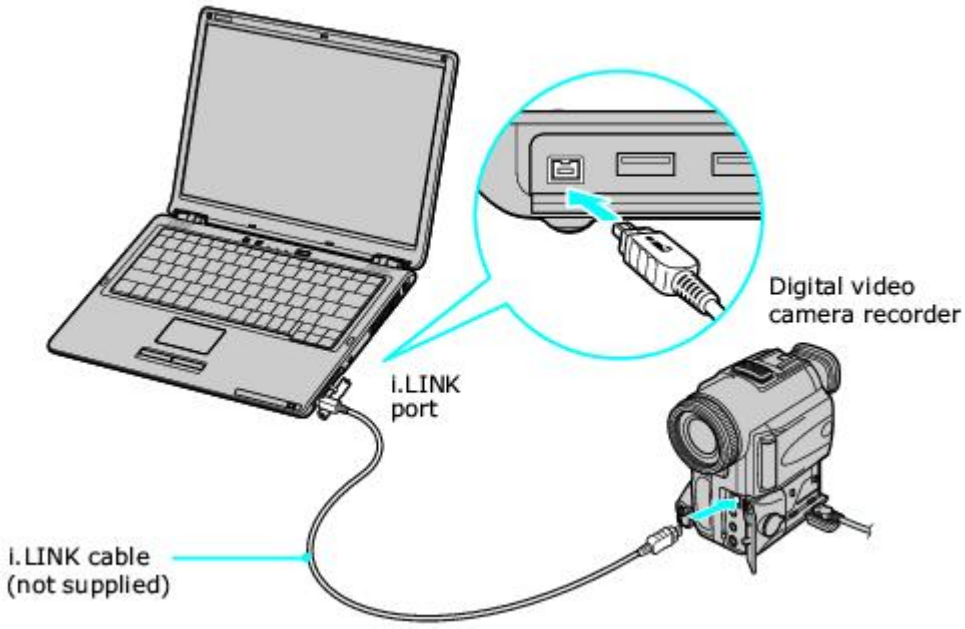
Before you connect an i.LINK digital video recorder

- Do not connect more than one digital video camera recorder at a time. The preinstalled programs on your computer will not recognize multiple cameras.
- Do not connect an external device that requires power from the i.LINK port. The i.LINK port does not supply power to the external device.
- The i.LINK port supports transfer rates of up to 400 Mbps; however, the actual transfer rate is the lowest transfer rate of the external device.
- The i.LINK features available may vary depending on the programs you use. See the help guide that accompanied your program for more information.

To connect an i.LINK digital video recorder

1. Turn on the digital video (DV) device and the computer.
2. Plug the i.LINK® cable into the i.LINK port on the DV device.
3. Plug the other end of the i.LINK cable into the i.LINK port on your computer. The **Found New Hardware** window appears on the lower right corner of your screen.

Connecting an i.LINK Digital Video Camera Recorder



See the guide that accompanied your digital video camera recorder for more information on its installation and use.

Disconnecting the i.LINK digital video recorder

You can disconnect the digital video recorder while the computer is on or off. Simply unplug the i.LINK cable from the i.LINK port on the computer. Disconnecting the cable when the computer is in a power saving mode (Standby or Hibernate) may cause the computer to malfunction.

Using a digital video camera recorder

Your computer comes with preinstalled driver software that is compatible with most Sony digital video camera recorders. If you purchased a camera that comes with its own driver software, install these drivers before you use the camera.

To view images

You can view images captured by your digital video camera recorder three different ways. Select one set of instructions from the following list:

- If your digital video camera recorder is compatible with the preinstalled programs, the **Digital Video Device** window appears when you connect the camera to the computer. Select the program you want to use in this window, and click **OK**.
- Click **Start**, and click **All Programs**. Select a program in which to view your images.
- Click **Start**, and click **Welcome to VAIO life**. Click **Movies, Music, and Pictures** and select a program in which to view your images.

Using Computer Monitors and Projectors

You can connect an external display (such as a computer monitor or a projector) to your computer.

Connecting a computer monitor

Your computer can display images to the computer screen (LCD), to an external computer monitor, or to both the LCD and external monitor while your computer is on.

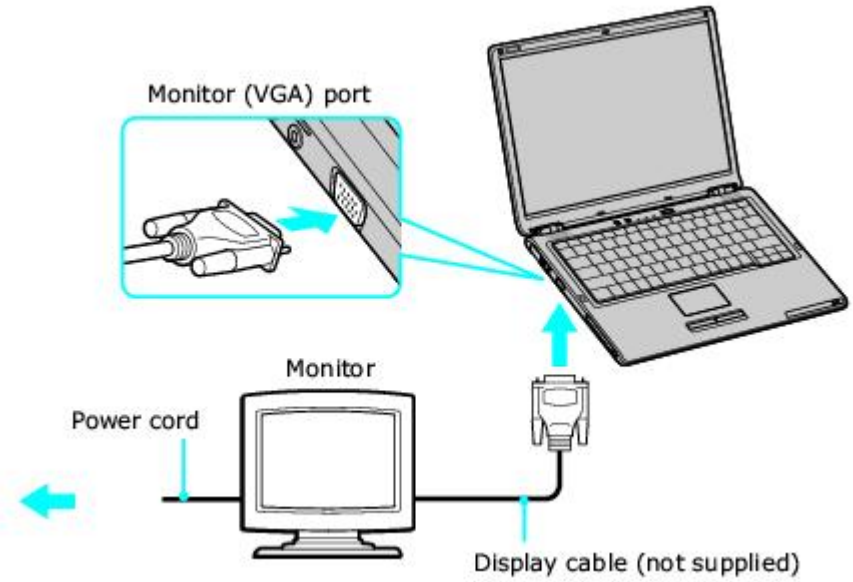
If you purchased a port replicator, you can connect your computer to a flat-panel display. See Connecting a Flat-Panel Display for more information.

To connect a computer monitor

1. Make sure the computer monitor is plugged into an AC outlet.
2. Plug the display cable into the Monitor (VGA) port on the computer.
3. If it is not already on, turn on the computer monitor.
4. Press the **Fn**+**F7** keys to toggle the display between your computer, the monitor, or both the computer and monitor. See Selecting a display for more information.

You cannot use the Monitor (VGA) port on your computer when a port replicator is connected to the computer. Use the Monitor (VGA) port on the port replicator instead.

Connecting a Computer Monitor



Connecting a multimedia projector

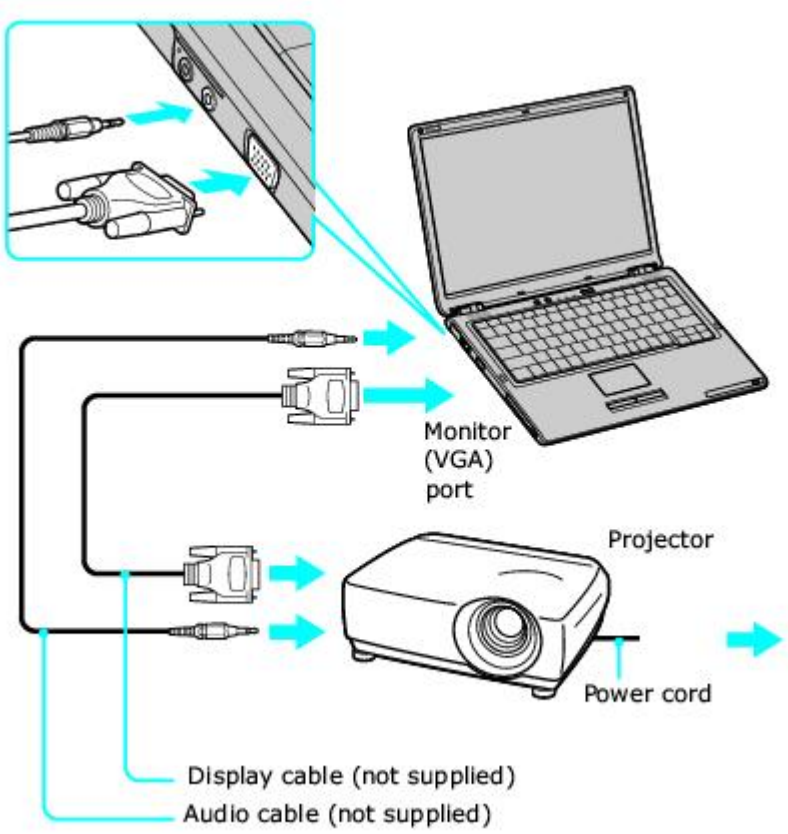
You can use a projector to display the actions and images from the computer screen (LCD).

To connect a multimedia projector

1. Plug the projector's power cord into an AC outlet.
2. Plug the display cable (not supplied) into the projector and the Monitor (VGA) port on your computer.

   To locate the Monitor port, see Locating Controls and Ports.

Connecting a Multimedia Projector



3. Plug the audio cable (not supplied) into the projector and the Headphones jack on your computer.
4. Turn on the projector (if it is not already on), and then turn on your computer.
5. Press the **Fn**+**F7** key combination to toggle the display between your computer and the projector. See Selecting a display for more information.

See the guide that accompanied your projector for more information on its installation and use.

Selecting a display

Your computer comes with a Plug and Display feature, which enables you to connect an external display to the computer and instantly view an image on the connected display. An external display may be a projector or computer monitor.

When you connect an external display, the Plug and Display icon appears in the Windows® taskbar and the image appears on both the computer's LCD screen and the external display.

Clicking the Plug and Display icon launches Sony Notebook Setup, where you can customize the Plug and Display settings.

To switch the display using shortcut features

You may switch the display to the computer screen (LCD), external display, or both the LCD and external display by using the Fn+F7 shortcut keys or the S1 or S1 button. See Using S1 and S2 Buttons for more information.

Shortcut keys Result

Fn+F7 Toggles the display between the computer screen (LCD), a connected external display, and both the LCD and an external display. You can also select the Setup option to adjust the Plug and Display settings. Select one display (LCD or an external display) when playing a DVD.

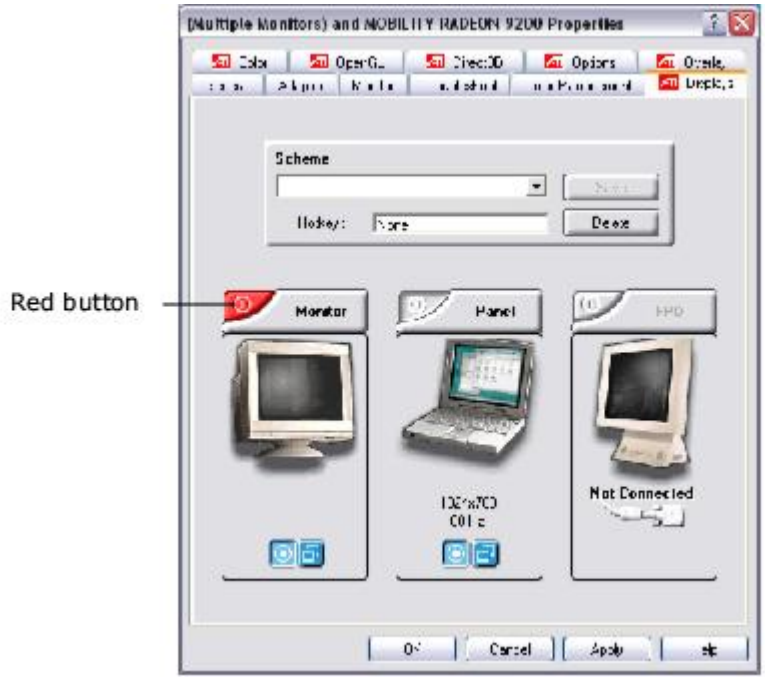
To switch the display using the Display Properties window

Depending on the external display, you may need to connect the display to the computer before you turn the computer on.

1. Click **Start** on the Windows® taskbar, and then click **Control Panel** and **Appearance and Themes**.
2. Click **Display**. The **Display Properties** window appears.
3. Click the **Settings** tab, and then click the **Advanced** button.
4. Click the **Displays** tab.

   When a display is connected to your computer, a red button appears on the properties window next to the picture of the display that is connected.

(Multiple Monitors) and MOBILITY RADEON Properties



5. Click the red button next to **Monitor** or **Panel**.
6. Click **Apply**. The **ATI Property Page** message box appears.

7. Click **Yes**.

8. Click **OK**.

9. For more information, click **Help**.

✍ If you cannot see your movie or DVD on the external display, change the monitor setting by clicking on the **Primary** icon on the display panel of your choice.

✍ You may not be able to display the computer screen (LCD) and an external display or projector at the same time, depending on the types of computer displays and projectors you are using.

To adjust the screen resolution

Plug and Display customizes the screen resolution to fit within the external display. However, if the external display's screen resolution is larger than the computer's LCD screen resolution, Plug and Display adjusts both images to the largest resolution shared by both devices. If the image is distorted, the screen resolution may be adjusted manually.

1. Click the **Start** menu and then click **Control Panel**.

2. Click **Appearance and Themes** and then click **Display**.

3. When the **Display Properties** window appears, select the **Settings** tab.

4. Use the slider in the **Screen resolution** box to adjust the screen resolution.

✍ Plug and Display may not work properly if you connect more than one external display at the same time.

Disconnecting a computer monitor or projector

You can disconnect the external computer monitor or projector by unplugging the monitor (VGA) cable from your computer's port. Disconnecting the external display when the computer is in a power saving mode (Standby or Hibernate) may cause the computer to malfunction.

Using Speakers

Your computer comes with built-in stereo speakers. If you wish to enhance the sound quality of your computer, you can purchase and connect external speakers. If you want to purchase speakers, make sure the speakers are designed for computer use. You can shop Sony online at http://www.sonystyle.com/vaio or contact your local retailer.

Connecting speakers

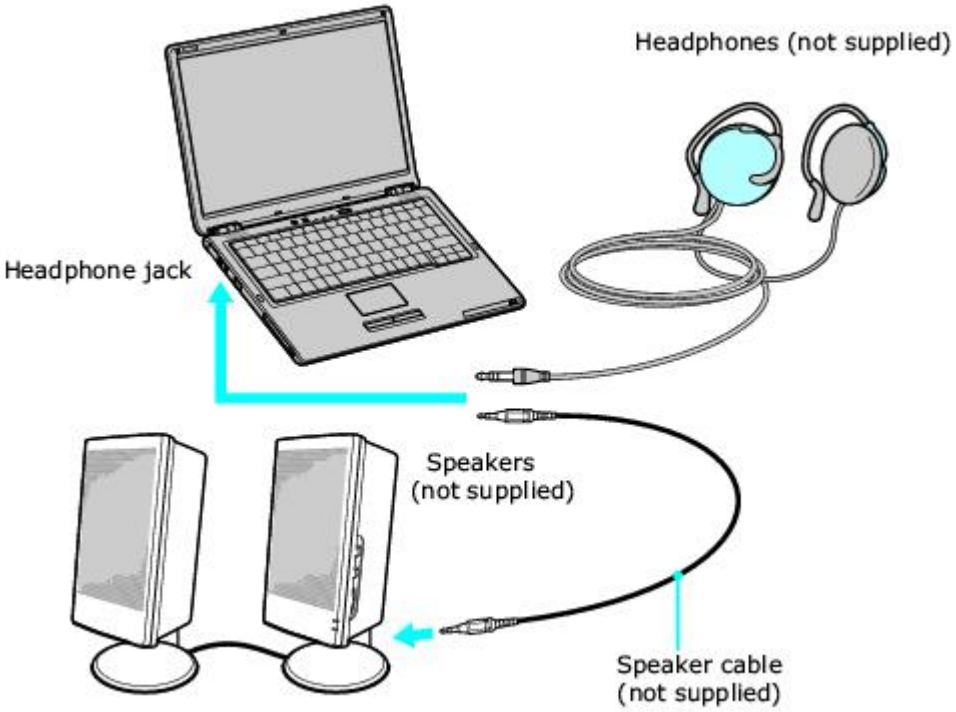
You can connect external speakers to your computer to enhance the sound quality of your computer.

Do not place floppy disks on the speakers. The speakers' magnetic field may damage the data stored on the floppy disks.

To connect speakers to your computer

1. Turn down the volume of the speakers.
2. Plug the speaker cable into the Headphone jack on the computer.
3. Plug the other end of the speaker cable into the speaker.

Connecting Speakers



See the guide that accompanied your speakers for more information on its installation and use.

Disconnecting speakers

You can disconnect external speakers when the computer is on or off. Simply unplug the speaker cable from the Headphone jack on the computer.

Adjusting the sound

You can adjust the volume by using the following shortcut keys. An on-screen display appears notifying you when a change occurs.

Fn+F2 Toggles the headphones and built-in speakers off and on.

Fn+F3 Decreases the speaker volume.

Fn+F4 Increases the speaker volume.

Alternatively, you can use the **Volume** icon on the Windows® taskbar.

To adjust the volume of your speakers

1. Right-click the **Volume** icon on the Windows® taskbar, and select **Open Volume Control**. The **Volume Control** window appears.
2. Click and drag the **Volume Control** slider up to increase volume and down to decrease volume.
3. Click to cancel any **Mute** check boxes that are selected.

Sound device	Function
Volume Control	Adjust the sound level from the speakers or headphones.
Wave	Adjust the wavfile sound or the system sound of Windows.
SW Synth	Adjusts the internal or external synthesizer volume.
Microphone	Adjust the internal or external microphone volume.
Telephony	Adjust the modem or telephone volume.
PC Beep	Adjust the beep sound when inserting or removing the PC Card and other devices.

Adjusting the volume for playing CDs and DVDs does not adjust the volume for recording sound files. You can only adjust the recording volume in the **Recording Control** window. See Using a microphone to record sound for instructions on how to open this window.

Enabling the sound

If you do not hear sound when playing a CD or DVD, you may need to enable the audio feature.

To enable the audio feature

1. Click **Start** on the Windows® taskbar, and click **Control Panel**.
2. Click **Performance and Maintenance**, and click **System**. The **System Properties** window appears.
3. Select the **Hardware** tab, and click **Device Manager**. The **Device Manager** window, which lists the hardware devices, appears.
4. Double-click **DVD/CD-ROM drives**[1].
5. Double-click the listed drive name, and click the **Properties** tab.
6. Click the **Enable digital CD audio for this CD-ROM device** check box if it is not already selected.

[1] The read/write drive letter designation may vary, depending on your system's hardware configuration.

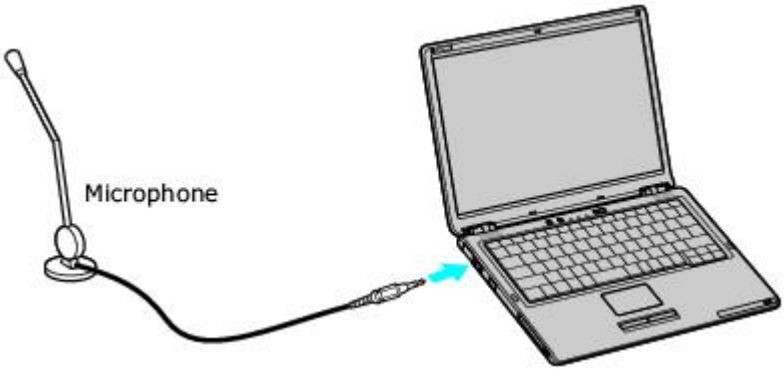
Using Microphones

You can connect an external microphone to your computer to enable the sound input to your computer. Make sure your microphone is designed for computer use. If you wish to purchase a microphone, shop Sony online at http://www.sonystyle.com/vaio or contact your local retailer.

Connecting a microphone

Plug the microphone cable into the Microphone jack[1] on the computer.

Connecting a Microphone



See the guide that accompanied your microphone for more information on its installation and use.

[1] A protruding dot located next to the Microphone jack distinguishes this jack from the Headphone jack.

Disconnecting a microphone

You can disconnect an external microphone when the computer is on or off. Simply unplug the microphone cable from the Microphone jack on the computer.

Using a microphone to record sound

You can record messages, memos, etc. by connecting a microphone to the Microphone jack[1] on your computer.

To record from a microphone

1. Double-click the **Volume** icon on the Windows® taskbar. The **Volume Control** window appears.
2. From the **Options** menu, click **Properties**. The **Properties** dialog box appears.
3. Click to select the **Recording** option in the **Adjust volume for** box.
4. Make sure the **Microphone** check box is selected in the **Show the following volume controls** list, and then click **OK**.
   The **Recording Control** window appears.
5. Click the **Select** check box at the bottom of the **Microphone** column, if it is not already selected. Close the **Recording Control** window.
6. Click **Start**, and select **All Programs**, **Accessories**, **Entertainment**, and then **Sound Recorder**. The **Sound - Sound Recorder** window appears.

For help using Sound Recorder, click **Help** in the **Sound Recorder** window.

To adjust the volume for recording sound

You can only adjust the volume for recording in the **Recording Control** window.

1. Right-click the **Volume** icon on the taskbar, and select **Adjust Audio Properties**.
2. On the **Audio** tab, click **Volume** in the **Sound recording** box. The **Recording Control** window appears.
3. Click and drag the **Microphone** slider up to increase volume and down to decrease volume.

[1] A protruding dot located next to the Microphone jack distinguishes this jack from the Headphone jack.

Memory Upgrades

Before you upgrade your computer's memory, read the safety information in Precautions and Procedures. For the type of module and amount of memory installed on your computer, refer to the VAIO® Computer Specifications.

Precautions and Procedures

Sony recommends that memory upgrades be performed by an authorized Sony Service Center. To find the nearest center or agent, go to: http://www.sony.com/pcsupport.

The procedures described below assume familiarity with the general terminology associated with personal computers and with the safety practices and regulatory compliance required for using and modifying electronic equipment. When installing a memory module in your computer, make sure you read the proper safety precautions below. Mistakes that occur when installing or removing a memory module may cause a malfunction.

- Turn off the computer. Disconnect the computer from its power source and from any telecommunications links, networks, or modems before you install or remove a memory module. Failure to do so may result in personal injury or equipment damage.
- Introducing any liquids or any foreign substances or objects into the memory slots, or other internal components of the computer, will result in damage to the computer.
- Electrostatic discharge (ESD) can damage disk drives, memory modules, and other components. Perform the procedures described below only at an ESD workstation. If such a station is not available, do not work in a carpeted area, and do not handle materials that produce or hold static electricity (cellophane wrappers, for example). Ground yourself by momentarily touching an unpainted metal object that is grounded, such as a pipe, radiator, or faucet.
- Do not open the memory module package until you are ready to install the module. The package protects the module from ESD.
- Use the special protective package to store a memory module and prevent ESD.
- Only use memory modules that are compatible with your computer. For the type of module and amount of memory installed on your computer, refer to the VAIO® Computer Specifications. If you wish to purchase a memory module, shop Sony online at http://www.sonystyle.com/vaio or contact your local retailer.

Removing and installing memory modules

Make sure you read the safety information in Precautions and Procedures before you remove or install a memory module. When installing a memory module, do not open the module package until you are ready to install it. The package protects the module from Electrostatic discharge (ESD).

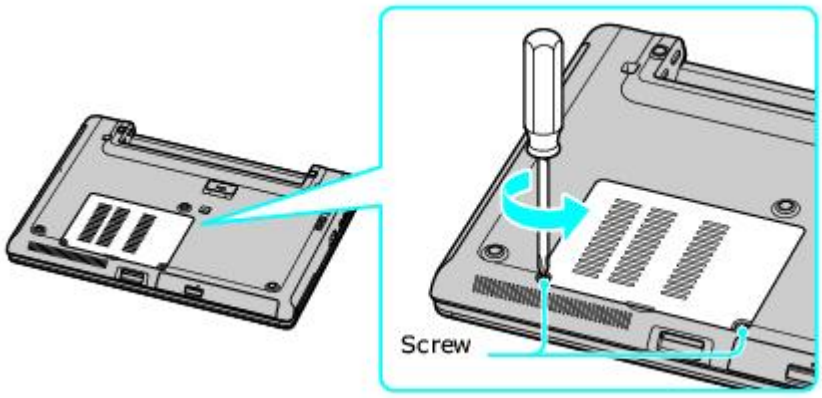
To remove a memory module

1. Turn off the computer and all attached devices.
2. Disconnect the power cord, all cables, and remove the battery if it is installed. See Removing a battery.
3. Wait for the computer to cool down.

   The interior of the computer becomes extremely hot during operation. Wait at least one hour for the computer to cool down before you remove the screws.
4. Turn the computer over and use a screwdriver to loosen and remove the screw(s) on the cover of the memory bay.

   To avoid damaging the computer, do not remove or loosen any other screws.

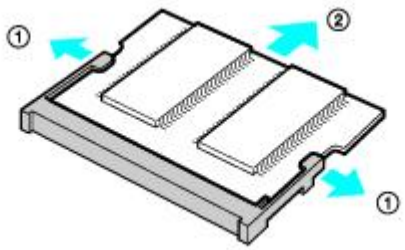
Removing the Bottom Screw(s)



5. Remove the memory bay cover carefully.
6. Touch a metal object (such as the connector panel on the back of your computer) to discharge static electricity.

   Avoid touching any part of the motherboard or other components inside the computer.
7. Remove the memory module by pulling out the tabs (see arrows No. 1), and pulling out the module in the direction of arrow No. 2. See To install a memory module for more information.

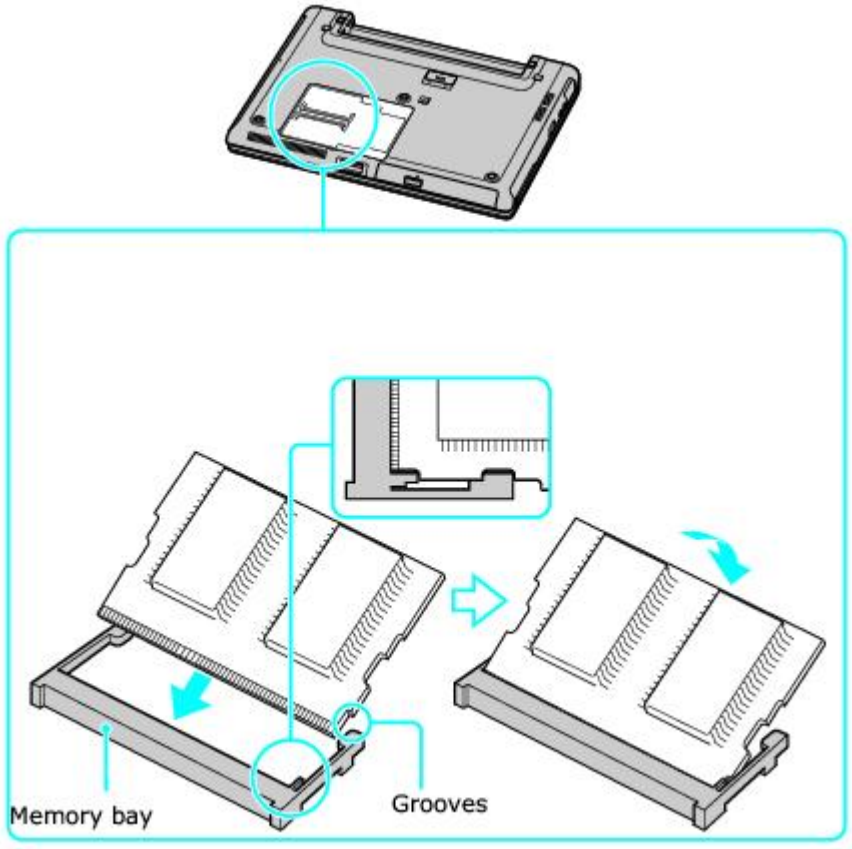
Removing a Memory Module



To install a memory module

1. Remove the new memory module from its packaging.
2. Install the memory module by sliding it into the open bay at a 45-degree angle. See To remove a memory module. Align the grooves on the memory module with the grooves in the bay.

Installing a New Memory Module



3. Push the module down until it snaps into the slot.
4. When the module is correctly seated in the slot, close the memory bay.
5. Replace the fastening screw(s) on the memory bay.
6. Make sure the system recognizes the new memory module. See Confirming Added Memory Capacity for more information.

Confirming Added Memory Capacity

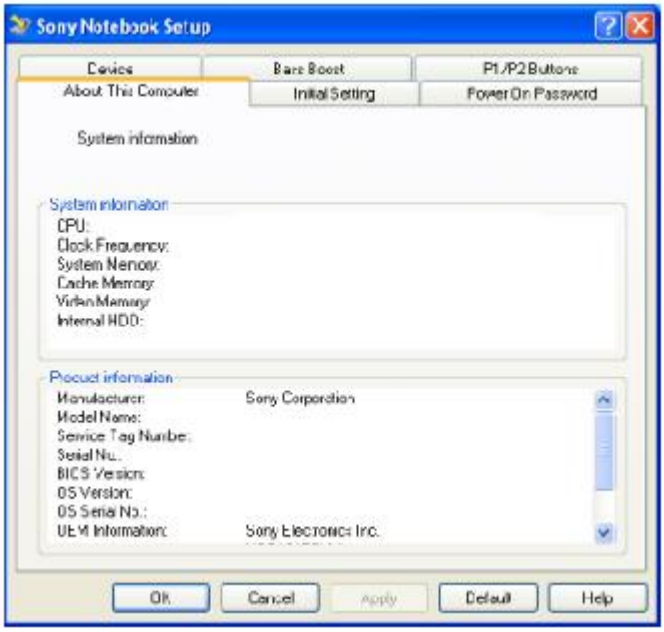
After you have installed a new memory module, make sure the operating system recognizes it.

To check your system's memory

1. Turn on the computer.
2. Click **Start** on the Windows® taskbar, point to **All Programs**, and then point to **Sony Notebook Setup**.
3. Select **Sony Notebook Setup** from the submenu. The **Sony Notebook Setup** dialog box appears.
4. On the **About This Computer** tab, make sure the **System Memory** displayed in the **System Information** box matches the amount of memory installed.

⚠ **The displayed memory may be less than the installed memory due to the amount used by the display adapter.**

Sony Notebook Setup



Computer

What do I do if my computer won't start?

- Make sure the computer is securely plugged into a power source and turned on. Make sure the power indicator shows the power is on.
- Make sure the battery is inserted properly and charged.
- Make sure the floppy disk drive (if applicable) is empty.
- If the computer is plugged into a power strip or uninterruptible power supply (UPS), make sure the power strip or UPS is turned on and working.
- If you are using an external display, make sure it is plugged into a power source and turned on. Make sure the brightness and contrast controls are adjusted correctly. See the guide that came with your display for details.
- Disconnect the AC adapter and remove the battery. Wait one minute. Reattach the AC adapter and reinsert the battery. Turn on the power.
- Condensation may cause the computer to malfunction. If this occurs, do not use the computer for at least one hour.
- If the computer still does not turn on, follow these steps:

1. Unplug the power cord and remove the battery.
2. Use a thin, straight object (such as a paper clip) to press the reset button on the bottom of the computer. For location information, see Locating Controls and Ports.
3. Reinsert the power cord and the battery.
4. Turn on the computer.

For further instructions, contact Sony Computing Support (http://www.sony.com/pcsupport).

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3. Reinsert the power cord and the battery.
4. Turn on the computer.

For further instructions, contact Sony Computing Support (http://www.sony.com/pcsupport).

What do I do if a BIOS error appears when my computer starts?

If the message "Press <F1> to resume, <F2> to setup" appears at the bottom of the screen, follow these steps:

1. Press the **F2 key**. The **BIOS Setup** menu appears.
2. Set the date (month/day/year). Press **Enter**.
3. Press the **Down Arrow** key to select **System Time**, and then set the time (hour: minute: second). Press **Enter**.
4. Press the **Right Arrow** key to select the **Exit** tab, and then press the **Down Arrow** key to select **Get Default Values**. The message **Load default values for all SETUP items.** appears.
5. Press the **Enter** key. The **Setup Confirmation** window appears.
6. Select **Yes**, and press **Enter**.
7. Select **Exit (Save Changes)**, and press **Enter**. The **Setup Confirmation** window appears.
8. Select **Yes**, and press **Enter**. The computer restarts.

If this occurs on a regular basis, contact Sony Computing Support (http://www.sony.com/pcsupport).

What do I do if the message "Operating system not found" appears when my computer starts, and why won't Windows start?

- Make sure the computer does not have a "non-bootable" floppy disk in the floppy disk drive (if applicable).
- If a non-bootable floppy disk is in the drive:
  1. Remove the floppy disk.
  2. Restart the computer and confirm that the Microsoft® Windows® operating system starts properly.
- If the Windows operating system still does not start, follow these steps to initialize the BIOS:
  1. If there is a disk in the floppy disk drive, then remove it.
  2. Turn off the computer.
  3. Remove any peripheral devices connected to the computer.
  4. Restart the computer.
  5. Press the **F2 key** when the Sony logo appears. The **BIOS Setup** window appears.
  6. Press the **Right Arrow** key → to select the **Exit** menu.
  7. Press the **Down Arrow** key ↓ to select **Get Default Values**. The message **Load default values for all SETUP items.** appears.
  8. Press the **Enter** key. The **Setup Confirmation** window appears.
  9. Select **Yes**, and press **Enter**.
  10. Select **Exit (Save Changes)**, and press **Enter**. The **Setup Confirmation** window appears.
  11. Select **Yes**, and press **Enter**. The computer restarts.

What do I do if my computer stops responding?

It is best to turn off your computer using the Turn Off Computer option on the Microsoft® Windows® Start menu, located on the taskbar. Using other methods, including those listed below, may result in loss of unsaved data.

- Click **Start** on the Windows® taskbar, select **Turn Off Computer**, and then click **Turn Off**.
- If your computer does not turn off, press the **Ctrl**+**Alt**+**Delete** keys simultaneously. When the **Windows Task Manager** dialog box appears, click **Turn Off** from the **Shut Down** menu.
- If your computer still does not turn off, press and hold the power button or slide and hold the power switch until the computer turns off.
- If your computer stops responding while playing a CD or DVD, press the **Ctrl**+**Alt**+**Delete** keys simultaneously. You can turn off the computer from the **Windows Task Manager**.

  Pressing the **Ctrl**+**Alt**+**Delete** keys simultaneously or turning off the computer with the power button or switch may cause loss of data.

- Remove the AC adapter and battery.

Why won't my computer enter Standby or Hibernate mode?

Your computer may become unstable if the operating mode is changed before the computer completely enters Standby or Hibernate.

To restore the computer to normal operating stability:

1. Close all open programs.
2. Restart the computer. Follow these steps:
    1. Press the **Windows** key .
    2. Press **U**.
    3. Press **R** to select restart.
3. If the computer does not restart, follow these steps:
    1. Press the **Ctrl**+**Alt**+**Delete** keys simultaneously. The **Windows Task Manager** window appears.
    2. Press and release **Alt** to highlight the menu bar, and press the **Right Arrow** key to select Shut Down.
    3. Press **Enter**.
    4. Press **R** to select restart.
4. If this procedure does not work, press and hold the power button or slide and hold the power switch until the computer turns off.

Why is the sound of my computer's fan so loud?

The computer's fan may be running at a high speed to cool the CPU. By lowering the CPU speed, you also lower the speed and noise level of the computer's fan.

To lower the CPU speed using the power schemes:

1. Click **Start** on the Windows® taskbar, and click **Control Panel**.
2. Click **Performance and Maintenance**, and click **Power Options**. The **Power Options Properties** window appears.
3. Select **Portable/Laptop** in the **Power schemes** box.
4. Click **Apply**.
5. Click **OK**.

Why does the System Properties dialog box display a slower CPU speed than the maximum?

This is normal. Because your computer's CPU utilizes a type of CPU speed controlling technology for power conservation purposes, System Properties may display the CPU's current speed instead of the maximum speed.

Why don't my changes appear on the computer screen (LCD)?

You may need to refresh the computer screen. Press and hold the **Windows** key , and press **D** twice.

How can I protect my system against security threats, such as viruses?

The Microsoft® Windows® operating system is preinstalled on your computer. The best way to protect your computer against security threats, such as viruses, is to download and install the latest Windows updates regularly.

You can get important Windows updates by doing one of the following:

- **The Automatic Updates** feature — This feature automatically searches for and delivers updates directly to your computer whenever you are connected to the Internet.
- **The Windows Updates Web site** — This site enables you to download computer updates without turning on the **Automatic Updates** feature.

Your computer must be connected to the Internet before you can receive updates.

To use the Automatic Updates feature

1. Connect to the Internet.
2. Click the **Automatic Updates** icon in the Taskbar notification area.

   The **Automatic Updates Setup Wizard** appears.
3. Click **Next**, and follow the on-screen instructions to set up automatic or scheduled updates.

To visit the Windows Updates Web site

1. Connect to the Internet.
2. Type http://windowsupdate.microsoft.com/ in the address bar of your browser.

   The **Microsoft Windows Update** and **Security Warning** windows appear.
3. In the **Security Warning** window, click **Yes to install and run Windows Update.**
4. In the **Microsoft Windows Update** window, click **Scan for updates**, and follow the on-screen instructions.

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What is the best way to set up firewall protection for my computer?

Using firewall protection is an important way to protect your computer from security threats that may occur when your computer is connected to the Internet. Your computer's preinstalled Microsoft® Windows® operating system has a built-in Internet Connection Firewall (ICF) feature that you can use to protect your computer.

Using the ICF feature may interrupt the file and print sharing features for preinstalled networking software programs, such as VAIO Media software. As an alternative, Sony suggests installing a router as a hardware-based firewall solution. A router box protects your computer and allows your network to run without interruption.

To disable the ICF feature

1. Click **Start** in the Windows® taskbar, and then click **Control Panel**.
2. Click **Network and Internet Connections**.
3. Click **Network Connections**.
4. In the section, **LAN or High-Speed Internet**, right-click the icon of the connection you want to protect.

   A shortcut menu appears.
5. Select **Properties** from the shortcut menu.
6. On the **Advanced** tab, under **Internet Connection Firewall**, clear the check box for **Protect my computer and network by limiting or preventing access to the computer from the Internet**.
7. Click **OK** to disable the ICF feature.

How do I keep my preinstalled antivirus software updated?

You can keep the preinstalled Norton Internet Security software program current with the latest updates from Symantec Corporation.

To download and install the latest security update

1. Double-click the **Norton Internet Security** icon in the Taskbar notification area.

   If you have not previously registered the antivirus software, a series of information wizards appear.

   1. Follow the on-screen instructions to complete each wizard
   2. Double-click the **Norton Internet Security** icon again.

      The **Norton Internet Security** window appears.

   If you have previously registered this antivirus software, the **Norton Internet Security** window automatically appears.

2. Click **Live Update**, located near the top of the window.
3. Follow the on-screen instructions to select and download updates.

How do I know when the battery is charged?

To determine the remaining battery charge, see Locating power status information.

How do I know when the battery is charged?

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When is the computer using AC power?

When the computer is directly connected to the AC adapter, it uses AC power, even if a battery is installed.

When should I recharge the battery?

- When the battery level falls below 10 percent.
- When both the battery and power indicators blink.
- When you have not used the battery for a long time.

When should I replace the battery?

If the battery power is still low after charging it, the battery may be reaching the end of its life and should be replaced.

Should I be concerned that the installed battery is warm?

No, it is normal for the battery to be warm when it is powering the computer.

Can my computer enter Hibernate mode while using battery power?

Your computer can enter Hibernate mode while using battery power, but some software programs and peripheral devices prevent the system from entering Hibernate mode. If you are using a program that prevents the system from entering Hibernate mode, save your data frequently to avoid losing data. See To activate Hibernate mode for information on how you can manually activate Hibernate mode.

Why doesn't my computer enter Hibernate mode?

You may first need to enable Hibernate mode. Follow these steps:

1. Click **Start** on the Windows® taskbar, and click **Control Panel**.
2. Click **Performance and Maintenance**, and click **Power Options**. The **Power Options Properties** window appears.
3. Select the **Hibernate** tab.
4. Click to check the box next to **Enable hibernation**.

Why doesn't my modem work?

- Make sure the telephone cable is securely plugged into the Modem jack on the computer and the wall jack.
- Make sure the telephone cable is working. Plug the cable into an ordinary telephone and listen for a dial tone.
- Make sure the telephone number the program is dialing is correct.
- Make sure the software you are using is compatible with the computer's modem. (All preinstalled Sony programs are compatible.)

Why doesn't my modem work?

- Make sure the telephone cable is securely plugged into the Modem jack on the computer and the wall jack.
- Make sure the telephone cable is working. Plug the cable into an ordinary telephone and listen for a dial tone.
- Make sure the telephone number the program is dialing is correct.
- Make sure the software you are using is compatible with the computer's modem. (All preinstalled Sony programs are compatible.)

Why is my modem connection slow?

Your computer is equipped with a V.90 compatible modem. Many factors may influence modem connection speed, including telephone line noise or compatibility with telephone equipment, such as fax machines or other modems. If you think your modem is not connecting properly to other PC-based modems, fax machines, or your Internet Service Provider (ISP), follow these steps:

- Ask your telephone company to verify your telephone line is free of any line noise.
- If your problem is fax-related, make sure there are no problems with the fax machine you are calling and that it is compatible with fax modems.
- If you are having a problem connecting with your ISP, make sure the ISP is not experiencing technical problems.
- If you have a second telephone line, try connecting the modem to that line.

Why can't my computer connect to a wireless LAN access point?

- Connection availability is affected by distance and obstructions. You may need to move your computer away from obstructions or closer to any access point you may be using.
- Make sure the Wireless switch on the computer is on.
- Make sure power to the access point is on.
- Make sure the access point is displayed in the Available networks window.
- Make sure the encryption key is correct.

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- Make sure the Wireless switch on the computer is on.
- Make sure power to the access point is on.
- Make sure the access point is displayed in the Available networks window.
- Make sure the encryption key is correct.

Why can't I access the Internet?

- Check the access point settings. Refer to the instructions supplied with the access point.
- Make sure your computer and the access point are connected to one another.
- Move your computer away from obstructions or closer to any access point you may be using.
- Make sure your computer is properly configured for Internet access.

Why is the data transfer speed slow?

- The wireless LAN data transfer speed is affected by distance and obstructions between devices and access points. Other factors include device configurations, radio conditions, and software compatibility. To maximize the data transfer speed, move your computer away from obstructions or closer to any access point you may be using.

- If you are using a wireless LAN access point, the device may be temporarily overloaded depending on how many other devices are communicating via the access point.

- If your access point interferes with other access points, change the access point channel. See your access point instructions for more information.

Why is the communication speed interrupted or slowed down when MPEG2 data is transferred?

The typical effective data transfer speed via an access point is 4-5 Mbps when adhering to the IEEE 802.11b standard or both the IEEE 802.11b and IEEE 802.11g standards (selected models only). High-rate stream transfers with MPEG2 data may lower this rate.

How do I avoid data transfer interruptions?

- When your computer is connected to an access point, data transfer interruptions may occur when using large files or if the computer is in close proximity to microwaves and cordless telephones.
- Move the computer closer to the access point.
- Make sure the access point connection is intact. For more information, see Checking your network connection status .
- Change the access point channel. See your access point instructions for more information.

Can I connect to an IEEE 802.11a device?

Computers with built-in wireless LAN support only the IEEE 802.11b and IEEE 802.11g standards (selected models only). Devices connecting to a wireless LAN using the IEEE 802.11a standard cannot connect to devices using the IEEE 802.11b/g standards.

What are channels?

Wireless LAN communication occurs on divided frequency bands known as channels. Third-party wireless LAN access point channels may be preset to different channels from Sony devices.

If you are using a wireless LAN access point, refer to connectivity information contained in your access point instructions.

When I change the encryption key, the network connection stops. What do I do?

Two computers with built-in wireless LAN may loose a peer-to-peer network connection if the encryption keys of both computers no longer match. You can either change both the encryption keys back to the original profile or, if you have not saved changes to the original profile, you can restart both computers.

Why can't other Bluetooth devices discover my computer?

- Make sure both devices have the Bluetooth® feature enabled.
- Your computer and the device may be too far apart. Wireless Bluetooth technology works best when the devices are within 32 feet (10 meters) of each other.
- The discovery option on your computer may be disabled. To ensure the discovery option is available, follow these steps:

  1. From the **Start** menu, click **Control Panel**.
  2. Click **Printers and Other Hardware**, and then click **Wireless Link**.

     The **Wireless Link** window appears.
  3. On the **Bluetooth** tab, click **Options**.

     The **Bluetooth Options** window appears.
  4. In the **Discovery** box, click to select the **Allow Bluetooth devices to find this computer** check box. Click **OK**.

- Your security settings may not permit a response to device discovery. To ensure your computer sends a response, follow these steps:

  1. From the **BlueSpace NE** window, click **Setting**, and then click **BlueSpace NE settings**.
  2. Click to open the **Security** tab.
  3. If it is not already selected, click to select the **Respond to Device Discovery** check box.

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- The discovery option on your computer may be disabled. To ensure the discovery option is available, follow these steps:

  1. From the **Start** menu, click **Control Panel**.
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     The **Wireless Link** window appears.
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  4. In the **Discovery** box, click to select the **Allow Bluetooth devices to find this computer** check box. Click **OK**.

- Your security settings may not permit a response to device discovery. To ensure your computer sends a response, follow these steps:

  1. From the **BlueSpace NE** window, click **Setting**, and then click **BlueSpace NE settings**.
  2. Click to open the **Security** tab.
  3. If it is not already selected, click to select the **Respond to Device Discovery** check box.

Why can't other Bluetooth devices connect to my computer?

- Make sure the other device is authenticated. For more information, see Authenticating devices.
- Your computer may not allow connections from other devices. To enable Bluetooth device connections, follow these steps:

  1. On the **BlueSpace NE** window, click **Setting**, and then click **BlueSpace NE settings**.
  2. Click to open the **Security** tab.
  3. If it is not already selected, click to select the **Allow connection from other devices** check box.

- The incoming connections option on your computer may be disabled. To ensure the incoming connections option is available, follow these steps:

  1. From the **Start** menu, click **Control Panel.**
  2. Click **Printers and Other Hardware**, and then click **Wireless Link**.

     The **Wireless Link** window appears.
  3. On the **Bluetooth** tab, click **Options**.

     The **Bluetooth Options** window appears.
  4. In the **Allow Incoming Connections** box, click to select the **Allow incoming connections** check box.
  5. Click **OK**.

How will I know when another Bluetooth device is requesting authentication?

A notification prompt appears on the Windows® taskbar. To verify the notification feature is enabled, follow these steps:

1. From the **Start** menu, click **Control Panel**.
2. Click **Printers and Other Hardware**, and then click **Wireless Link**.

   The **Wireless Link** window appears.
3. On the **Bluetooth** tab, click **Options**.

   The **Bluetooth Options** window appears.
4. In the **Authentication Agent** box, click to select the **Enable Authentication Agent** check box. Click **OK**.

Why is my Bluetooth connection slow?

- The 2.4 GHz radio frequency used by Bluetooth and wireless LAN devices is also used by other devices. Bluetooth devices incorporate technology that minimizes interference from other devices using the same wavelength, however, communication speed and connection range may be reduced. Interference from other devices may also stop communication altogether.

- Connection availability is affected by distance and obstructions. You may need to move your computer away from obstructions or closer to the device to which it is connected.

- Identify and remove obstacles between your computer and the device to which it is connected.

- Please note that due to limitations of the Bluetooth standard, large files may occasionally be corrupted during continuous transfer due to electromagnetic interference from the environment.

Can I use a device equipped with Bluetooth technology on airplanes?

With Bluetooth technology, your computer transmits a radio frequency of 2.4 GHz. Sensitive locations, such as hospitals and airplanes, may have restrictions on the use of Bluetooth devices, due to radio interference. Check with facility staff to verify that use of the Bluetooth feature on your computer is permitted.

How do I maintain CDs and DVDs?

- Avoid touching the surface of the disc with your fingers. Fingerprints and dust on the surface of the disc may cause reading errors.
- Try using canned compressed air to clean dusty discs.
- Do not clean the disc with solvents (such as benzine, thinner, alcohol, commercially available cleaners, or anti-static spray), which may damage the disc. To clean the disc, follow these steps:

    1. Hold the edge of the disc, and use a soft cloth to wipe the surface from the center out.
    2. If the disc is badly soiled, moisten a soft cloth with water, wring it out well, and use it to wipe the surface of the disc from the center out.
    3. Wipe off any remaining moisture with a dry, soft cloth.

- Do not drop or bend the disc.

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    3. Wipe off any remaining moisture with a dry, soft cloth.

- Do not drop or bend the disc.

Why does my computer freeze when I try to read a disc?

- The disc your computer is trying to read may be dirty or damaged. Follow these steps:

    1. Restart the computer by clicking **Start**, **Turn Off Computer**, and **Restart**.
    2. Eject the disc from the optical drive.
    3. Examine the disc for dirt or damage. If the disc is dirty, see How do I maintain CDs and DVDs? for instructions on how to clean it.

What do I do if the drive tray won't open?

- Make sure the computer is on.
- Press the Eject button on the optical drive.
- If the Eject button does not work, click **Start** on the Windows® taskbar, and click **My Computer**. Right click the optical drive icon, and select **Eject** from the shortcut menu.
- If none of the above options work, insert a thin, straight object (such as a paper clip) in the manual eject hole near the Eject button.

What do I do if the optical drive isn't playing my CD or DVD properly?

- Make sure the disc was inserted into the drive with the label facing up.
- Make sure the necessary program(s) is installed according to the manufacturer's instructions.
- If the CD or DVD is dirty or damaged, the computer will stop responding. Follow these steps:

  1. Restart the computer by pressing the **Ctrl+Alt+Delete** keys, and selecting **Restart** from the **Shut Down** menu of the **Windows Task Manger** dialog box.
  2. Remove the CD or DVD from the optical drive.
  3. Check the disc for dirt or damage. If you need to clean the disc, see How do I maintain CDs and DVDs? for instructions.

- If you are playing a CD or DVD and cannot hear sound, follow these steps:

  1. Double-click the **Volume** icon on the **Taskbar Notification** area, and click to cancel the **Volume Control Mute All** and **Wave Mute** check boxes.
  2. Check the volume setting in the audio mixer.
  3. If you are using external speakers, check the volume settings on the speakers and the connections between the speakers and the computer.
  4. Make sure the CD audio feature is enabled and the correct driver software is installed. Follow these steps:

     1. Click **Start** on the Windows® taskbar, click **Control Panel**, **Performance and Maintenance**, and **System**. The **System Properties** window appears.
     2. Select the **Hardware** tab, and click **Device Manager** in the **Device Manager** box. A window with a listing of the computer's hardware devices appears.

        If an "X" or an exclamation point appears on the listed device, you may need to enable the device or reinstall the drivers.

     3. Double-click the optical drive device to open the submenu.
     4. Double-click the listed drive, and select the **Properties** tab.
     5. Click to select the **Enable digital CD audio for this CD-ROM device** check box, if it is not selected.
     6. Click **OK**.

     To reinstall the driver software, continue with the following steps:

     7. Double-click the optical drive device to open the submenu.
     8. Double-click the listed drive, and select the **Properties** tab.
     9. Select the **Driver** tab and click **Update Driver**. Follow the steps provided by the **Hardware Update Wizard**.

- Make sure an adhesive label was not attached to the CD or DVD. Adhesive labels can come off while the disc is in the optical drive and damage the drive or cause it to malfunction.
- If a region code warning appears, the disc may be incompatible with the optical drive. Check the DVD package to make sure the region code is compatible with the optical drive.
- If you notice condensation on the computer, do not use the computer for at least one hour. Condensation can cause the computer to malfunction.

Why did the computer screen (LCD) go blank?

- Your computer screen may go blank if the computer has lost power or has entered a power saving mode (Standby or Hibernate). If the computer is in LCD (Video) Standby mode, press any key to activate the computer screen. See Using power saving modes for more information.

- Make sure the computer is plugged into a power source and is on. The power indicator on the computer will be on if the computer is on.

- If your computer is using battery power, make sure the battery is inserted properly and is charged. See Using the Battery for more information.

- If the display mode is set to external display, use the **Fn+F7** key combination. See Selecting a display for more information.

Why can't I view the entire DVD video display on the external display?

The display resolution may not be properly set. To adjust the display resolution, see Selecting a display for more information. It is recommended that you adjust the display resolution to 1024 x 768 or smaller, depending on the size of the external display screen.

How do I adjust the image on the external display?

Use the controls on your external display to adjust the image. See the help guide that accompanied your display for more information.

How do I change the video resolution on the external display?

The video may not appear on the entire screen if your computer resolution is set larger than 1024 x 768. Adjust the video resolution to 1024 x 768 or smaller.

To change the video resolution, follow these instructions:

1. Right-click the desktop, and select **Properties** from the shortcut menu. The **Display Properties** dialog box appears.
2. Select the **Settings** tab.
3. Move the screen resolution slider to the left to reduce the size and to the right to increase the size of the video resolution.

Why can't I print a document?

- Make sure the printer is on, and the printer cable is securely connected to the ports on your printer and computer.
- Make sure the printer is compatible with the Microsoft® Windows® operating system installed on your computer.
- You may need to install the printer driver software before you use the printer. See the guide that accompanied the printer for more information.
- If the printer is not functioning after the computer resumes from a power saving mode (Standby or Hibernate), then restart the computer.
- If the bidirectional communication functions are provided with your printer, disabling the functions on your computer may enable printing. Follow these steps:

1. Click **Start**, and then **Control Panel**.
2. Click **Printers and Other Hardware**.
3. Click **Printers and Faxes**.
4. Right-click an unused printer and select **Properties**.
5. Click the **Ports** tab.
6. Click to cancel the **Enable bidirectional support** check box.
7. Click **OK**.

This change to the settings disables the bidirectional communication functions of your printer, such as data transfer, status monitoring, and remote panel.

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This change to the settings disables the bidirectional communication functions of your printer, such as data transfer, status monitoring, and remote panel.

Microphone

Why doesn't my microphone work?

If you are using an external microphone, make sure the microphone is turned on and is properly plugged into the Microphone jack on the computer. See Connecting a microphone for more information. If the microphone is battery-powered, make sure the batteries are correctly installed.

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Why doesn't my microphone work?

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Mouse

What do I do if the computer doesn't recognize the mouse?

- Make sure the mouse is securely plugged into the port.
- Restart the computer with the mouse connected to the computer.

Mouse

What do I do if the computer doesn't recognize the mouse?

- Make sure the mouse is securely plugged into the port.
- Restart the computer with the mouse connected to the computer.

What do I do if the pointer doesn't move when I use the mouse?

- Make sure another mouse is not installed.
- If you are playing a disc, press the **Ctrl**+**Alt**+**Delete** keys simultaneously to stop playback and restart the computer.
- If you still cannot use the pointer, restart the computer. You can restart the computer three different ways:
  - Press the **Windows** key , and press **U**. When the **Turn Off Computer** window appears, press **R**.
  - Press the **Ctrl**+**Alt**+**Delete** keys simultaneously. When the **Windows Task Manager** window appears, press the **Alt** key to highlight the menu bar, and press the **Right Arrow** key to select **Shut Down**. Press **Enter**, and then press **R**.
  - Press and hold the power button. When the computer turns off, press the power button again to restart the computer.

Speakers

Why won't my speakers work?

- Make sure the speakers are properly connected and the volume is turned up loud enough to hear sound.
- Make sure the speaker volume is not muted and is loud enough to hear sound. Use the Fn+F2 keys to toggle the mute option on and off, and use the Fn+F4 keys to increase the volume.
- Your speakers may not be designed for computer use.
- If the speakers have a mute button, set the button to off.
- If the speakers have a volume control, make sure the volume is turned up loud enough to hear sound.
- If you have connected an audio cable to the Headphones jack, disconnect the cable and use the speaker cable that was supplied with the speakers.
- If you are using battery power, make sure the battery is inserted properly and is charged.
- If the speakers require external power, make sure the speakers are connected to a power source. See the guide that accompanied the speakers for more information.

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- Your speakers may not be designed for computer use.
- If the speakers have a mute button, set the button to off.
- If the speakers have a volume control, make sure the volume is turned up loud enough to hear sound.
- If you have connected an audio cable to the Headphones jack, disconnect the cable and use the speaker cable that was supplied with the speakers.
- If you are using battery power, make sure the battery is inserted properly and is charged.
- If the speakers require external power, make sure the speakers are connected to a power source. See the guide that accompanied the speakers for more information.

Why can't I hear sound from my speakers?

- If the computer is using battery power, make sure the battery is properly inserted and is charged.
- Make sure the speaker volume is not muted and is loud enough to hear sound. Use the Fn+F2 keys to toggle the mute option on and off, and use the Fn+F4 keys to increase the volume.
- Make sure the sound feature on your computer is enabled. See Enabling the sound for more information.
- If you are using a program that has its own volume control, make sure the volume control is properly set. See that program's help guide for more information.

Why don't the Fn+F2, Fn+F3, or Fn+F4 key combinations work?

The Fn+F2 keys toggle the headphones and built-in speakers on and off. The Fn+F3 keys decrease the built-in speaker volume and the Fn+F4 keys increase the built-in speaker volume. The computer may not recognize the Fn+F2, Fn+F3, and Fn+F4 keys if the correct speakers are not selected. Follow these steps:

1. Right-click the **Volume** icon on the taskbar, and select **Adjust Audio Properties**.
2. On the **Volume** tab, click **Advanced** in the **Speaker settings** box. The **Advanced Audio Properties** window appears.
3. On the **Speakers** tab, select the correct speaker setup from the **Speaker setup** drop-down menu.

What do I do if the touch pad does not work?

- Try restarting your computer. Follow these steps:
  1. Press the **Windows** key .
  2. Press **U**. The **Turn off computer** window opens.
  3. Press **R** to restart the computer.
- If the computer does not restart, follow these steps:
  1. Press the **Ctrl**+**Alt**+**Delete** keys simultaneously. The **Windows Task Manager** window appears.
  2. Press and release **Alt** to highlight the menu bar, and press the **Right Arrow** key to select **Shut Down**.
  3. Press **Enter**.
  4. Press **R** to restart the computer.
- If you still cannot restart your computer, press and hold the power button to turn off the computer.
- If the pointer does not move while playing a disc, press **Ctrl**+**Alt**+**Delete** simultaneously to stop playback and restart the computer.
- If you are still experiencing problems, make sure another mouse is not installed.
- You may have disabled the touch pad without connecting a mouse to the computer. See To enable the touch pad.

What do I do if the touch pad does not work?

- Try restarting your computer. Follow these steps:
  1. Press the **Windows** key .
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  2. Press and release **Alt** to highlight the menu bar, and press the **Right Arrow** key to select **Shut Down**.
  3. Press **Enter**.
  4. Press **R** to restart the computer.
- If you still cannot restart your computer, press and hold the power button to turn off the computer.
- If the pointer does not move while playing a disc, press **Ctrl**+**Alt**+**Delete** simultaneously to stop playback and restart the computer.
- If you are still experiencing problems, make sure another mouse is not installed.
- You may have disabled the touch pad without connecting a mouse to the computer. See To enable the touch pad.

How do I change the left and right button assignments?

If your computer is interpreting a single-click as a double-click, you may want to change the button assignments. Follow these steps:

1. Click **Start** on the Windows® taskbar and click **Control Panel,** and then click **Printers and Other Hardware** and **Mouse.** The **Mouse Properties** dialog box appears with the **Buttons** tab selected.

2. Select your preferences in the **Button Selection** box, and then click **Apply** to install your settings.

   ✍ You may need to use the **Tab** key and the **Up Arrow** ↑ and **Down Arrow** ↓ keys to make your selections.

3. Click **OK** to close the window.

Why doesn't the Safely Remove Hardware icon appear on the taskbar when the drive is connected?

The computer does not recognize the floppy disk drive. First, make sure the USB cable is properly connected to the USB port. If you need to secure the connection, wait a few moments for the computer to recognize the drive. If the icon still does not appear, follow these steps:

1. Close all programs that were accessing the floppy disk drive.
2. Wait for the LED indicator on the floppy disk drive to turn off.
3. Push the Eject button, and remove the disk.
4. Reconnect the floppy disk drive by inserting the USB connector (with the USB icon facing upward) into the USB port .
5. Restart the computer by clicking **Start** on the Windows® taskbar, **Turn Off Computer**, and then **Restart**.

Why doesn't the Safely Remove Hardware icon appear on the taskbar when the drive is connected?

The computer does not recognize the floppy disk drive. First, make sure the USB cable is properly connected to the USB port. If you need to secure the connection, wait a few moments for the computer to recognize the drive. If the icon still does not appear, follow these steps:

1. Close all programs that were accessing the floppy disk drive.
2. Wait for the LED indicator on the floppy disk drive to turn off.
3. Push the Eject button, and remove the disk.
4. Reconnect the floppy disk drive by inserting the USB connector (with the USB icon facing upward) into the USB port .
5. Restart the computer by clicking **Start** on the Windows® taskbar, **Turn Off Computer**, and then **Restart**.

Why is the drive unable to write data to a floppy disk?

Make sure the floppy disk is properly inserted in the drive. See Inserting and removing floppy disks for instructions on how to insert the disk properly.

If the disk is inserted properly and you are still unable to write data to it, the disk may be full or write-protected. You can either use a floppy disk that is not write-protected or disable the write-protect feature by moving the write-protect tab on the bottom of the disk to the close position.

Why doesn't my PC Card work?

- Make sure the PC Card is inserted properly. See Inserting PC Cards for more information.
- Make sure the PC Card is compatible with the Microsoft® Windows® operating system installed on your computer.
- See the instructions that accompanied your PC Card. You may need to install driver software if you are not using a Sony PC Card.

Why doesn't my PC Card work?

- Make sure the PC Card is inserted properly. See Inserting PC Cards for more information.
- Make sure the PC Card is compatible with the Microsoft® Windows® operating system installed on your computer.
- See the instructions that accompanied your PC Card. You may need to install driver software if you are not using a Sony PC Card.

Why doesn't my computer recognize attached devices?

For some PC Cards, if you alternate between normal power operation and the Standby or Hibernate modes while the card is inserted into the PC Card slot, the computer may not recognize the PC Card or the connected device. Restart your computer.

Why can't I insert my PC Card?

- Make sure you are inserting the card correctly. See Inserting PC Cards for more information.
- You may not be able to use some PC Cards or some functions of the PC Card with this computer. Check the guide that accompanied your PC Card for more information on its use.

Why does an exclamation mark (!) appear on the Device Manager tab in the System Properties dialog box?

- The exclamation mark indicates there is a problem with the specified device. Make sure all cable and power connections are secure.
- You may not be using the most recent driver software provided by the PC Card manufacturer. Make sure the necessary drivers are installed. You may need to remove the driver software, and reinstall it.

Why can't I use the DV recorder?

You may not be able to use the DV recorder, and the message **DV equipment seems to be disconnected or turned off** may appear because the i.LINK®[1] cable is not securely plugged into the ports on the computer or camera. Unplug the connectors, and plug them in again. See Using i.LINK Digital Video Recorders for more information.

[1] i.LINK is a trademark of Sony used only to designate that a product contains an IEEE 1394 connection. The i.LINK connection may vary, depending on the software applications, operating system, and compatible i.LINK devices. All products with an i.LINK connection may not communicate with each other. Refer to the documentation that came with your compatible i.LINK device for information on operating conditions and proper connection. Before connecting compatible i.LINK PC peripherals to your system, such as CD-RW or hard disk drive, confirm their operating system compatibility and required operating conditions.

Why can't I use the DV recorder?

You may not be able to use the DV recorder, and the message **DV equipment seems to be disconnected or turned off** may appear because the i.LINK®[1] cable is not securely plugged into the ports on the computer or camera. Unplug the connectors, and plug them in again. See Using i.LINK Digital Video Recorders for more information.

[1] i.LINK is a trademark of Sony used only to designate that a product contains an IEEE 1394 connection. The i.LINK connection may vary, depending on the software applications, operating system, and compatible i.LINK devices. All products with an i.LINK connection may not communicate with each other. Refer to the documentation that came with your compatible i.LINK device for information on operating conditions and proper connection. Before connecting compatible i.LINK PC peripherals to your system, such as CD-RW or hard disk drive, confirm their operating system compatibility and required operating conditions.

Why can't I open my image files?

You may need to reformat your Memory Stick® media.

Formatting Memory Stick media erases all data, including music data, previously saved to it. Before you reformat Memory Stick media, back up important data and confirm that the media does not contain files you want to keep.

1. Copy the data from the Memory Stick media onto your computer's hard disk to save data or images.
2. Format the Memory Stick media using Memory Stick Formatter software preinstalled on your computer. For instructions about formatting a Memory Stick media, see Formatting Memory Stick media.

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Why can't I save music files onto my Memory Stick media?

- Copyright protected music cannot be checked out to any Memory Stick media other than MagicGate Memory Stick media.
- Using recorded music requires permission of the copyright holders.
- Sony is not responsible for music files that cannot be recorded from a CD or downloaded from other sources.

Can I copy images from a digital video camera using Memory Stick media?

Yes, and you can view video clips that you have recorded with Memory Stick media-compatible video camera recorders.

How do I prevent damage to the Memory Stick media?

- Do not use the media in locations that are subject to static electricity or electrical noise.
- Do not touch the media connector with your finger or metallic objects.
- Do not attach labels other than the supplied label to a media.
- Do not bend, drop, or apply strong shock to the media.
- Do not disassemble or modify the media.
- Do not allow the media to get wet.

How do I extend the life of the Memory Stick media?

- Use the supplied storage case. See the instructions that came with your media for more information on its use.
- Do not use or store the media in a location that is subject to:
  - Extremely high temperatures, such as in a car parked in the sun
  - Direct sunlight
  - High humidity or places with corrosive substances

Support Options

The section contains information on where to go for answers to questions about your VAIO® computer and the preinstalled software.

Sony Support Information

Refer to the following sources for answers in the sequence listed below.

1 VAIO® Computer Documentation

This on-screen VAIO® Computer User Guide and the printed VAIO Computer Quick Start provide detailed information on how to maximize your computer's capabilities and solve common problems.

2 Program Guides and Help Files

The preinstalled programs on your computer may come with individual help guides. These guides are stored on the hard disk as on-screen Help files. You can find the Help files from the Help menu under the specific program.

3 Operating System Online Support

Your computer comes preinstalled with a Microsoft® Windows® operating system. For operating system support, you can visit Microsoft® customer support at: http://support.microsoft.com/directory/.

4 Sony Computing Support

This service provides instant access to information on commonly encountered problems. Type a description of the problem and the Knowledge Database searches for the corresponding solutions online. You can visit Sony Computing Support at: http://www.sony.com/pcsupport.

5 VAIO Update

When your computer is connected to the Internet, VAIO Update automatically notifies you when critical software and security information is posted on the support Web site. Click the VAIO Update notice to open the VAIO Support Web site and view the information. You can also right-click the **VAIO Update** icon in the **Taskbar Notification** area and select **Go to VAIO Web Support** to open the support Web site.

Program Support Information

Depending on the configuration you purchased, your computer may not include all of the software programs listed below.

Adobe® Photoshop® Elements, Photoshop® Album, Premiere®, Reader®
Adobe Systems Inc.

Web site http://www.adobe.com

Telephone 800-685-3652

America Online® (Broadband or Dial-Up)
AOL, Inc.

Web site http://www.aol.com

AOL® Instant Messenger
AOL, Inc.

Web site http://www.aim.com

Click to DVD
Sony Electronics Inc.

At the touch of a button, Click to DVD software allows you to automatically burn DVDs from a digital video (DV) device. Create DVDs by capturing video content straight from a DV device or by importing video from stored files — and you can also edit the video. Create DVD photo albums and slide shows with picture files or by importing pictures from a digital still camera. What's more, you can easily give a professional look to your DVDs by adding chapter menus, backgrounds, and menu screens. You are only a few clicks away from your own DVDs!

Web site http://www.sony.com/pcsupport

Telephone 888-4-SONY-PC (888-476-6972)

CLIÉ Converter
Sony Electronics Inc.

CLIÉ Converter software is a plug-in program that converts Giga Pocket® Video Capsules into Movie Player format for playback on your Sony® CLIÉ® handheld. After converting your Video Capsules, you can use CLIÉ Converter software to transfer them to Memory Stick® media or to save them to your hard disk drive for transfer to your CLIÉ handheld during your next HotSync® operation.

Web site http://www.sony.com/pcsupport

Telephone 888-4-SONY-PC (888-476-6972)

Drag'n Drop CD+DVD
DigiOn, Inc., and Easy Systems Japan Ltd.

Web site http://www.ddcd.jp/dd3e/sony/cd

DVgate Plus
Sony Electronics Inc.

Connect a compatible digital video camera to your computer's i.LINK® port and capture video clips and still images. Edit clips from your video, add new clips, and combine clips into new movie segments. Save your movies back to your digital video camera or in a variety of popular file formats.

Web site http://www.sony.com/pcsupport

Telephone 888-4-SONY-PC (888-476-6972)

Giga Pocket® Personal Video Recorder
Sony Electronics Inc.

Giga Pocket® Personal Video Recorder is a unique set of hardware and software components that provide you with excellent TV viewing, recording, and playback experiences. You can watch and record your favorite TV programs from your computer, create custom playlists, and play your Video Capsules on other compatible computers. Giga Pocket® Personal Video Recorder enables your computer, TV, VCR, and other video player devices to work in harmony.

Web site http://www.sony.com/pcsupport

Telephone 888-4-SONY-PC (888-476-6972)

Google Toolbar
Google, Inc.

Web site http://toolbar.google.com/help.html

ImageStation®
Sony Electronics, Inc.

With ImageStation® online service, you can store, organize, and share your photos and video clips online. ImageStation online service membership is free (except for transactions) and includes unlimited storage of digital photos, storage for 15 minutes of video clips, tools to personalize the design and arrangement of your pictures in albums, and access to stories and tips about image handling in ImageStation Magazine.

Web site http://www.sony.com/pcsupport

Telephone 888-4-SONY-PC (888-476-6972)

Microsoft® Office Basic Edition, Office Professional Edition, Office Small Business Edition, Office Small Business Edition Trial Version, Office Student and Teacher Edition Trial Version
Microsoft Corp.

Web site http://www.sony.com/pcsupport

Telephone 888-4-SONY-PC (888-476-6972)

Microsoft® Internet Explorer, Movie Maker, Media® Player, Works
Microsoft Corp.

Web site http://www.support.microsoft.com

MoodLogic
MoodLogic, Inc.

Web site http://www.moodlogic.com/support

E-mail help@moodlogic.com

Netscape® Internet Service
AOL Inc.

Web site http://isp.netscape.com/help/

Telephone 866-541-8233

Network Smart Capture
Sony Electronics Inc.

Network Smart Capture captures images and video from any Sony® Digital Camcorder that supports a standard i.LINK® connection. Send your video or still images through e-mail or upload them to the ImageStation® service. You can use the Web camera function to automatically upload your captured images.

Web site	http://www.sony.com/pcsupport
Telephone	888-4-SONY-PC (888-476-6972)

Norton Internet Security
Symantec Corporation

Web site	http://www.symantec.com/techsupp

PictureGear Studio
Sony Electronics Inc.

PictureGear Studio still image management software displays still images from your hard drive or a Sony digital still camera. The still images appear in a convenient light-table format so that you can easily view the contents of an entire folder, create your own photo albums, and make prints.

Web site	http://www.sony.com/pcsupport
Telephone	888-4-SONY-PC (888-476-6972)

Quicken® New User Edition
Intuit Inc.

Web site	http://www.intuit.com/support
Telephone	800-644-3193

SonicStage®
Sony Electronics Inc.

The SonicStage jukebox software program gives you all the tools you need to manage music on your computer. SonicStage software sports high-quality digital audio storage, a sleek player skin design, and audio CD burning capability.

Web site	http://www.sony.com/pcsupport
Telephone	888-4-SONY-PC (888-476-6972)

SonicStage Mastering Studio
Sony Electronics Inc.

Use SonicStage Mastering Studio software to record songs from analog records or cassette tapes into your computer and output them to CD-R or CD-RW discs or audio files in WAV format.

Web site	http://www.sony.com/pcsupport
Telephone	888-4-SONY-PC (888-476-6972)

Sony® VAIO® Product Registration
Sony Electronics Inc.

VAIO Product Registration is an integrated registration program for both Sony Electronics and Microsoft Corporation. By registering with Sony, you enable Sony to notify you of software and hardware issues that may affect your user experience. Microsoft directs the data to Sony Electronics. Sony uses the registration data for warranty and product support purposes and the analysis of customer feedback on Sony computer features.

Web site	http://www.sony.com/pcsupport

Telephone 888-4-SONY-PC (888-476-6972)

TurboTax® for the Web
Intuit, Inc.

Web site http://www.intuit.com/support

VAIO Action Setup
Sony Electronics Inc.

VAIO Action Setup manages the settings for your computer's shortcut keys.

Web site http://www.sony.com/pcsupport

Telephone 888-4-SONY-PC (888-476-6972)

VAIO Edit Components
Sony Electronics Inc.

VAIO Edit Components is a software plug-in for Adobe® Premiere® software that provides maximum compatibility and video quality for capturing video from your Sony digital camcorder.

Web site http://www.sony.com/pcsupport

Telephone 888-4-SONY-PC (888-476-6972)

VAIO Media
Sony Electronics Inc.

VAIO Media software brings multimedia to your network, enabling you to share music, video, and still image files between your VAIO® computers. You can set up one or more computers as "media servers," which store your multimedia files and make them available to other compatible VAIO computers on your wired or wireless network.

Web site http://www.sony.com/pcsupport

Telephone 888-4-SONY-PC (888-476-6972)

VAIO Update
Sony Electronics Inc.

The VAIO Update utility helps you keep your VAIO® computer up to date by regularly checking the Sony Online Support Web site for important software updates and information for your specific VAIO computer model.

Web site http://www.sony.com/pcsupport

Telephone 888-4-SONY-PC (888-476-6972)

WinDVD® for VAIO®
InterVideo, Inc.

Web site http://www.intervideo.com/jsp/Support.jsp

Telephone 510-651-0888